Installation and Service Instructions

for use by heating contractor

Vitotronic 200, Type HO1B
Digital boiler control unit

Vitotronic 300-K, Type MW2B
Weather-compensated, digital cascade control unit

VITOTRONIC® 200
VITOTRONIC® 300-K

Vitotronic 200

Vitotronic 300-K

Certified as a component part for Viessmann boilers

Product may not be exactly as shown

IMPORTANT

Read and save these instructions for future reference.

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Please file in Service Binder

Safety, Installation and Warranty Requirements

Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause product/property damage, severe personal injury, and/or loss of life. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

- **Product documentation**
  Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.

  ▶*For a listing of applicable literature, please see section entitled "Important Regulatory and Safety Requirements".*

- **Warranty**
  Information contained in this and related product documentation must be read and followed. Failure to do so renders the warranty null and void.

- **Licensed professional heating contractor**
  The installation, adjustment, service and maintenance of this equipment must be performed by a licensed professional heating contractor.

  ▶*Please see section entitled "Important Regulatory and Installation Requirements".*

- **Advice to owner**
  Once the installation work is complete, the heating contractor must familiarize the system operator/ ultimate owner with all equipment, as well as safety precautions/requirements, shutdown procedure, and the need for professional service annually before the heating season begins.

⚠ WARNING

Installers must follow local regulations with respect to installation of carbon monoxide detectors. Follow the Viessmann maintenance schedule of the boiler contained in this manual.

Operating and Service Documentation

It is recommended that all product documentation such as parts lists, operating and service instructions be handed over to the system user for storage. Documentation is to be stored near boiler in a readily accessible location for reference by service personnel.

Product Information

Vitotronic 200, Type HO1B
Vitotronic 300K, Type MW2B
For use with Viessmann boilers only.
Applicable to the following control units

Order No. 7533389□□□□□□□□
Serial No. 7533389□□□□□□□□

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About these Instructions

Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING", "CAUTION", and "IMPORTANT". See below.

WARNING

Indicates an imminently hazardous situation which, if not avoided, could result in loss of life, serious injury or substantial product/property damage.

▶ *Warnings draw your attention to the presence of potential hazards or important product information.*

CAUTION

Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/ property damage.

▶ *Cautions draw your attention to the presence of potential hazards or important product information.*

IMPORTANT

▶ *Helpful hints for installation, operation or maintenance which pertain to the product.*

▶

▶ *This symbol indicates that additional, pertinent information is to be found.*

▶ *This symbol indicates that other instructions must be referenced.*

For your Safety

⚠ CAUTION

Follow these safety instructions closely to avoid the risk of injury and damage to property.

- **Operation**
  Before operating the boiler, make sure you fully understand its method of operation. Your heating contractor should always perform the initial start-up and explain the system. Any warranty is null and void if these instructions are not followed.
- **Flue gas smell**
  - Deactivate heating equipment.
  - Open windows and doors.
  - Inform your heating contractor.
- **Working on the equipment**
  All personnel working on the equipment or the heating system must have the proper qualifications and hold all necessary licenses. Ensure main power to equipment, heating system, and all external controls has been deactivated. Close main gas supply valve. Take precautions in all instances to avoid accidental activation of power during service work.
- **Dangerous conditions**
  - Deactivate main power immediately.
  - Close gas supply valve.
- **Maintenance and cleaning**
  Regular inspection and service by a qualified heating contractor is important to the performance of the boiler. Neglected maintenance impacts on warranty; regular inspection ensures clean, environmentally friendly and efficient operation. We recommend a maintenance contract with a qualified heating contractor.
- **Technical documentation**
  - Installation Instruction and Service Instructions
  - Operating Instructions and User's Information Manual

Additional applicable literature:
- Accessory manuals

If you smell gas

- Don't smoke! Don't use naked flames or cause sparks (e.g. by switching lights or electrical appliances on and off)
- Open windows and doors
- Close the gas shut-off valve
- Inform your heating engineers/service contractors from outside the building
- Observe the safety regulations of your gas supply company (see gas meter) and those of your heating engineers (see start-up or instruction report).

In emergencies

- Immediately switch off the power supply, e.g. at the separate fuse or power supply disconnect switch (unless there is a smell of gas).
- Close the shut-off valves in the oil pipes or close the gas shut-off valve, whichever applicable.
- Use suitable extinguishers in the event of fire.

Installation of additional components

The installation of additional components which have not been tested together with the boiler can adversely affect the function and performance of the boiler.
Our warranty does not cover and we accept no liability for damage attributable to the installation of such components.

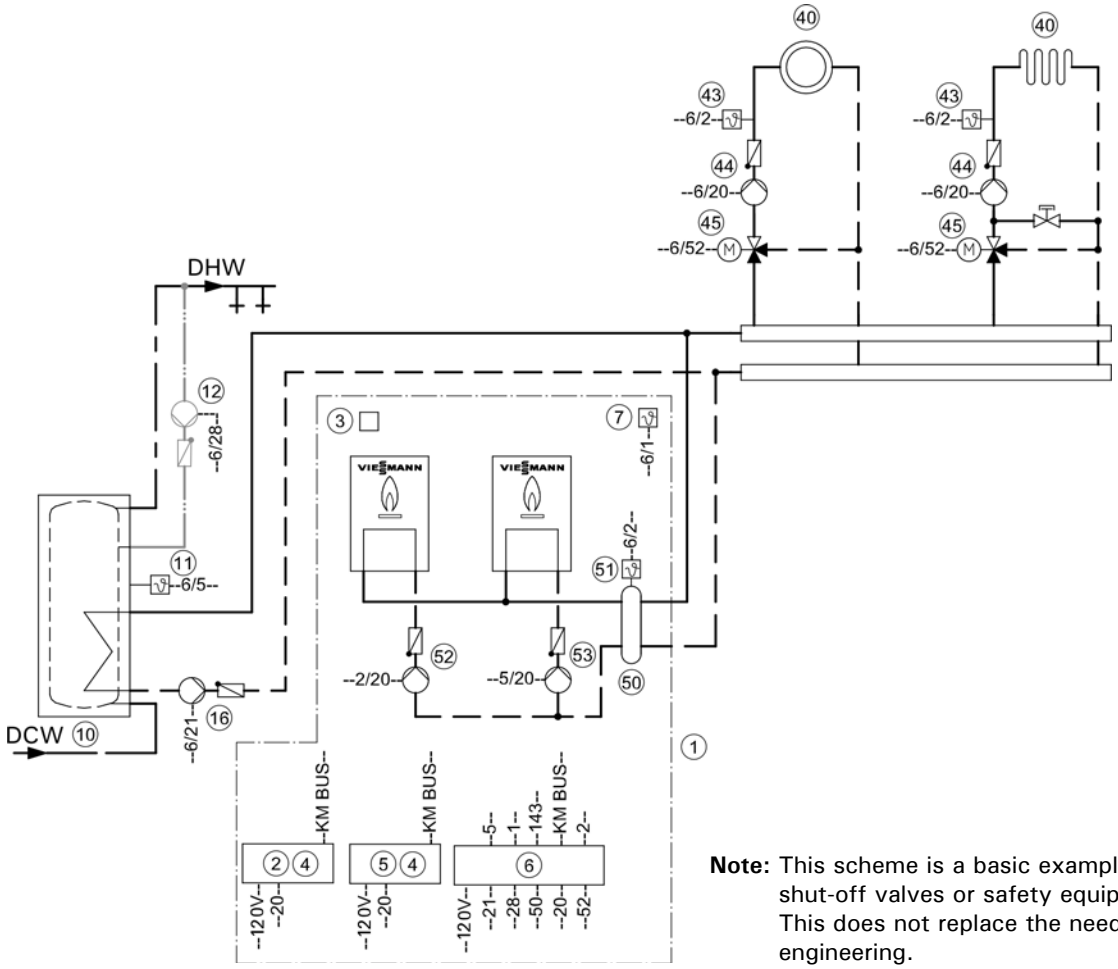
Boiler room conditions

- Do not use a room in which the air is polluted by halogenated hydro-carbons (e.g. as contained in aerosols, paints, solvents and cleaning agents)
- Do not use a room subject to high levels of dust
- Do not use a room subject to permanently high humidity
- The room should be frost-protected
- Max. ambient temperature 95°F (35°C).
- Provide good ventilation and do not close or obstruct vents (if installed).

This symbol indicates a reference to other instructions which must be observed.

System Example

Multi boiler system with several heating circuits with mixing valve and low loss header (with/without DHW heating)



Note: This scheme is a basic example without shut-off valves or safety equipment. This does not replace the need for local engineering.

Legend

① Multi boiler system with 2 to 8 Vitodens 200-W, hydraulic cascade with low loss header and connection accessories
with
② Vitodens 200-W in cascade mode
⑤ Vitodens 200-W in cascade mode
③ Cascade communication module
④ Internal extension H1
⑥ Vitotronic 300-K
⑦ Outside temperature sensor ATS
⑩ Indirect DHW storage tank
⑪ DHW temperature sensor
⑫ DHW recirculation pump
⑯ DHW pump
㊵ Heating circuit with mixing valve
㊸ Supply temperature sensor, heating circuit M2/M3
㊹ Heating circuit pump, heating circuit M2/M3
and
3-way mixing valve
㊺ Mixing valve motor kit for heating circuit with mixing valve (mixing valve motor and supply temperature sensor ㊸)
㊿ Low loss header
(51) Supply temperature sensor for low loss header
(52) Boiler pump
(53) Boiler pump

System Example *(continued)*

Vitotronic 200 (set codes at every Vitotronic 200 - boiler control)
Switching mode from standalone/weather compensated control to constant temperature control (see page 12).

Required coding		
Group	**Code**	
2	01:2	Multi boiler system with Vitotronic 300-K **Note:** Code "00:0" is set automatically.
2	 07:1 07:2 07:3 07:4 07:...	Setting the boiler number at the Vitotronic 100 of the respective boiler Boiler 1 (factory set condition) Boiler 2 Boiler 3 Boiler 4 ... Boiler (up to 8)

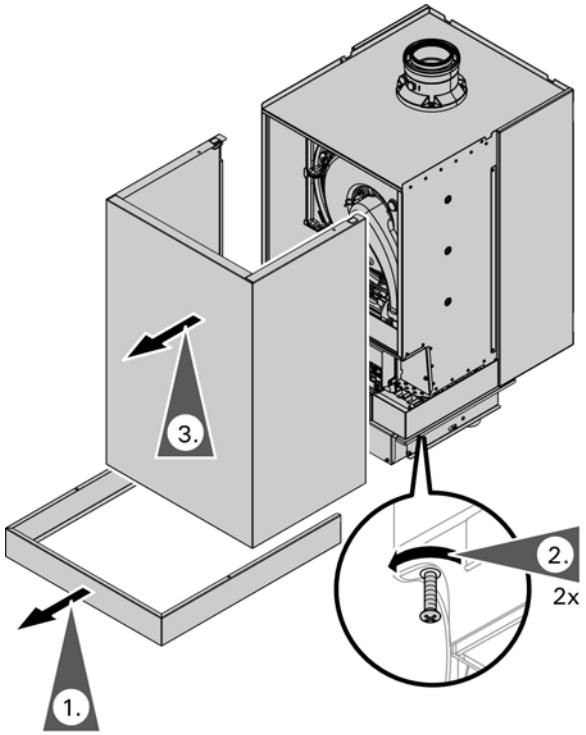
Vitotronic 300-K

Required coding		
Group	**Code**	
General	00:...	System version, see table for coding address 00 in the overview on page 50.
General	7E:0	Without positive pressure flue gas cascade
Cascade	35:1 35:2 35:3 35:4 35:...	Do not adjust Multi boiler system with two boilers Multi boiler system with three boilers Multi boiler system with four boilers (factory set condition) Multi boiler system with ... boilers (up to 8)

Vitotronic 200-H (if installed)

Required coding		
Group	**Code**	
General	97:1	The outside temperature is accepted by the LON BUS

Preparing Boilers for Cascade Mode

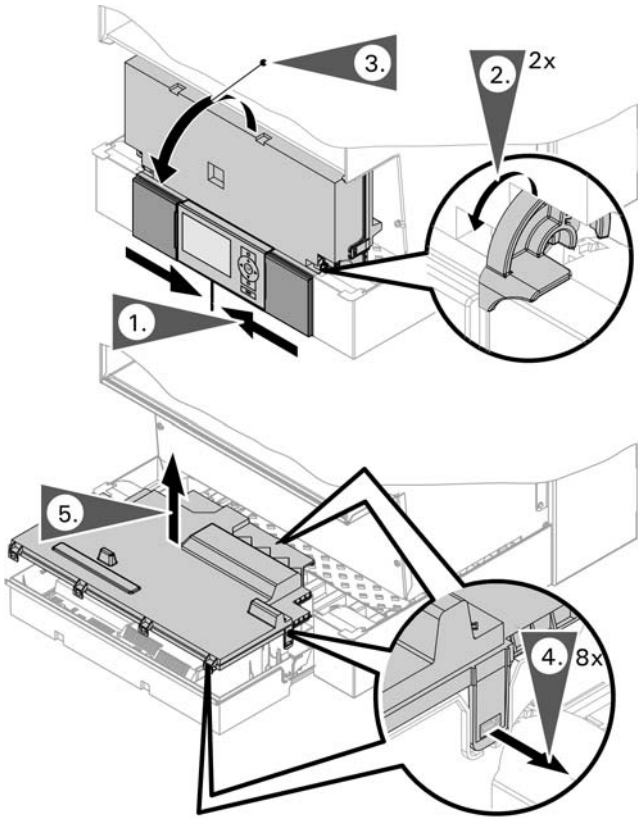


IMPORTANT

The following procedure must be done on each boiler connected to the Vitotronic 300-K.

Removing the front enclosure panel

1. Remove the external accessories connection box cover.
2. Loosen the screws at the bottom of the boiler (do not remove completely).
3. Remove the front encloser panel (lift up and pull away from the boiler).



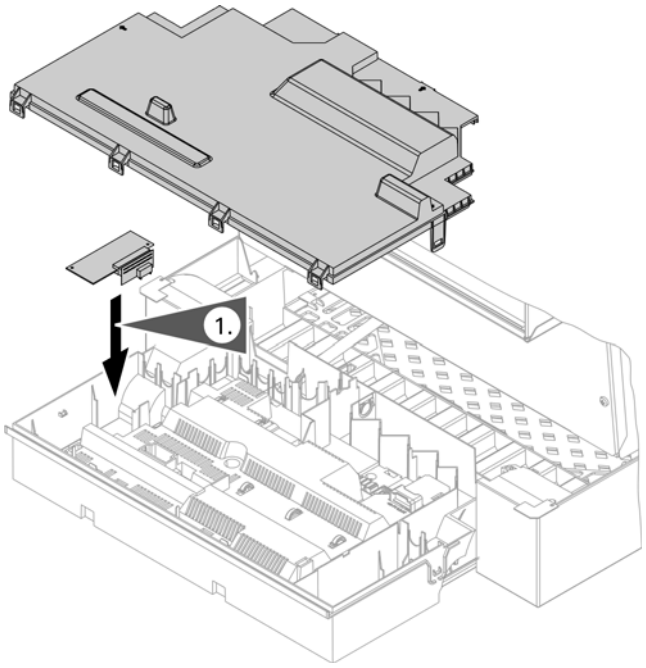
Opening the control unit cover

For installation, commissioning, maintenance and service of Vitodens 200-W with Vitotronic 200: see separate installation instructions and service instructions.

If a DHW tank is to be integrated into the system, make the connection at the Vitotronic 300-K.

1. Slide both sides of the programming unit cover closed.
2. Release the hinged hooks located on both sides of the control unit.
3. To open hinged cover, lift cover and then fold down the control unit.
4. Release locking tabs as shown.
5. Remove cover.

Preparing Boilers for Cascade Mode *(continued)*

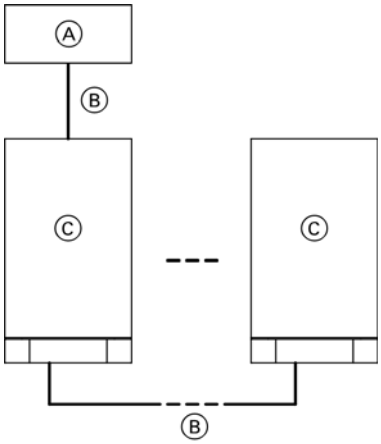


Installation of the cascade communication module

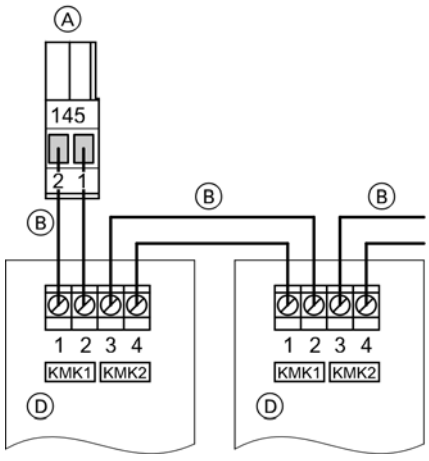
The cascade communication module is part of the standard delivery.

1. Installing the cascade communication module to the Vitotronic 200.

Note: The cascade communication module must be fitted into every Vitotronic 200.



Legend
Ⓐ Vitotronic 300-K
Ⓑ 2-wire communication cable 18 AWG
Ⓒ Boiler with Vitotronic 200



Legend
Ⓐ Plug 145 to the Vitotronic 300-K
Ⓑ 2-wire communication cable 18 AWG
Ⓓ Terminal strip on the cascade communication module in the Vitotronic 200

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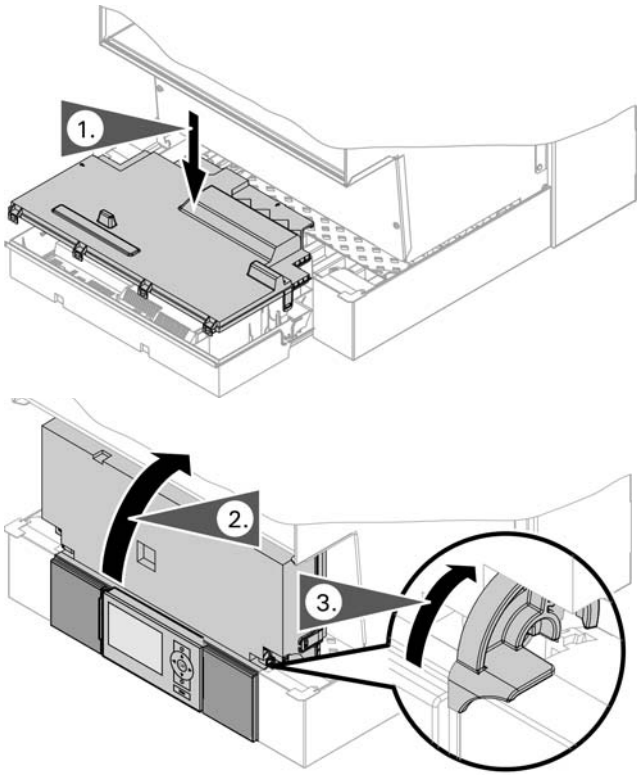
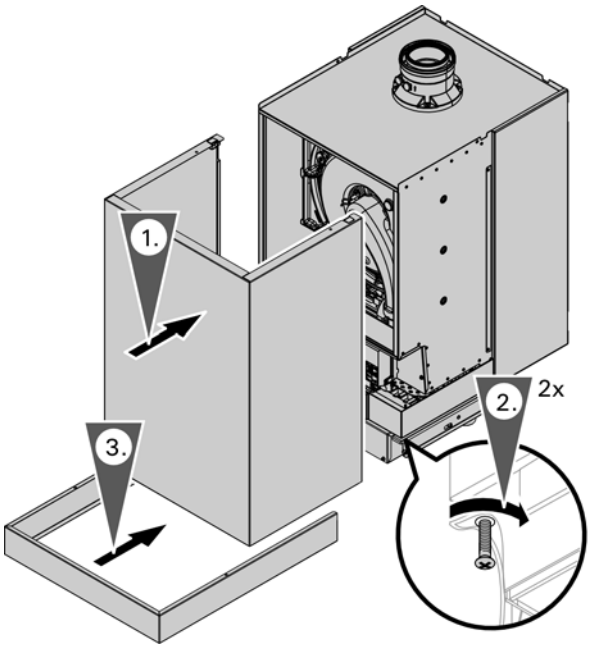
Preparing Boilers for Cascade Mode *(continued)*



Closing the control unit cover

1. Install the cover onto the control board.
2. Flip the control board back into position.
3. Secure the locking tabs as shown.



Reinstalling the front enclosure panel

1. Set front enclosure panel on the guide rails and push in place.
2. Tighten screws at the bottom.
3. Insert the external accessories connection box cover in place.

Preparing Boilers for Cascade Mode *(continued)*

IMPORTANT

The following procedure must be done to configure each boiler for constant temperature control (cascade control) mode.

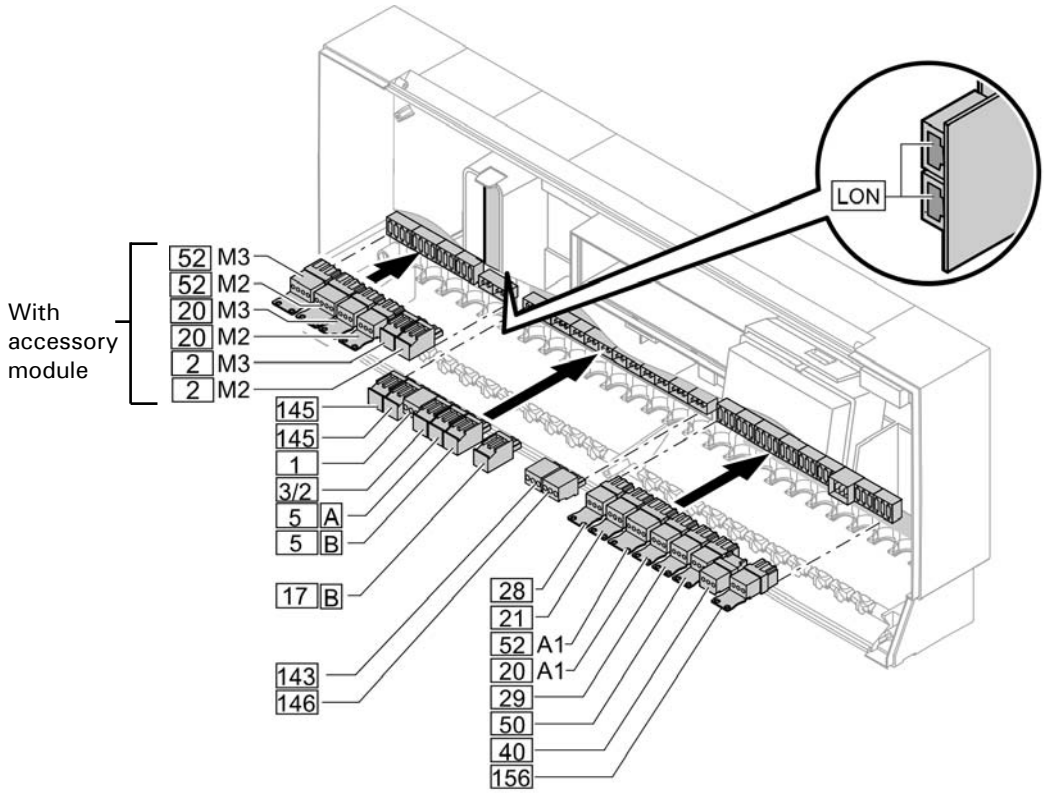
1. Turn on the boiler and set the language then press 'OK'.
2. Set the time and date and press 'OK'.

Refer to the boiler Installation Instructions.

3. Press and hold OK and ☰ until service menu comes up.
4. Scroll using ▲/▼ to the service functions, press OK.
5. Scroll using ▲/▼ to the multi-boiler system.
6. Press OK.
7. Scroll using ▲/▼ to "Yes".
8. Press OK.
   Note: The boiler will restart in cascade mode.
9. Set the language and press 'OK'.

Refer to the boiler Installation Instructions.

Overview of Electrical Connections, Vitotronic 300-K



Legend

PCB, extension for heating circuits 2 and 3 (accessory)

- 2 M2/M3 Supply temperature sensor
- 20 M2/M3 Heating circuit pump
- 52 M2/M3 Mixing valve motor

Main circuit board, low voltage

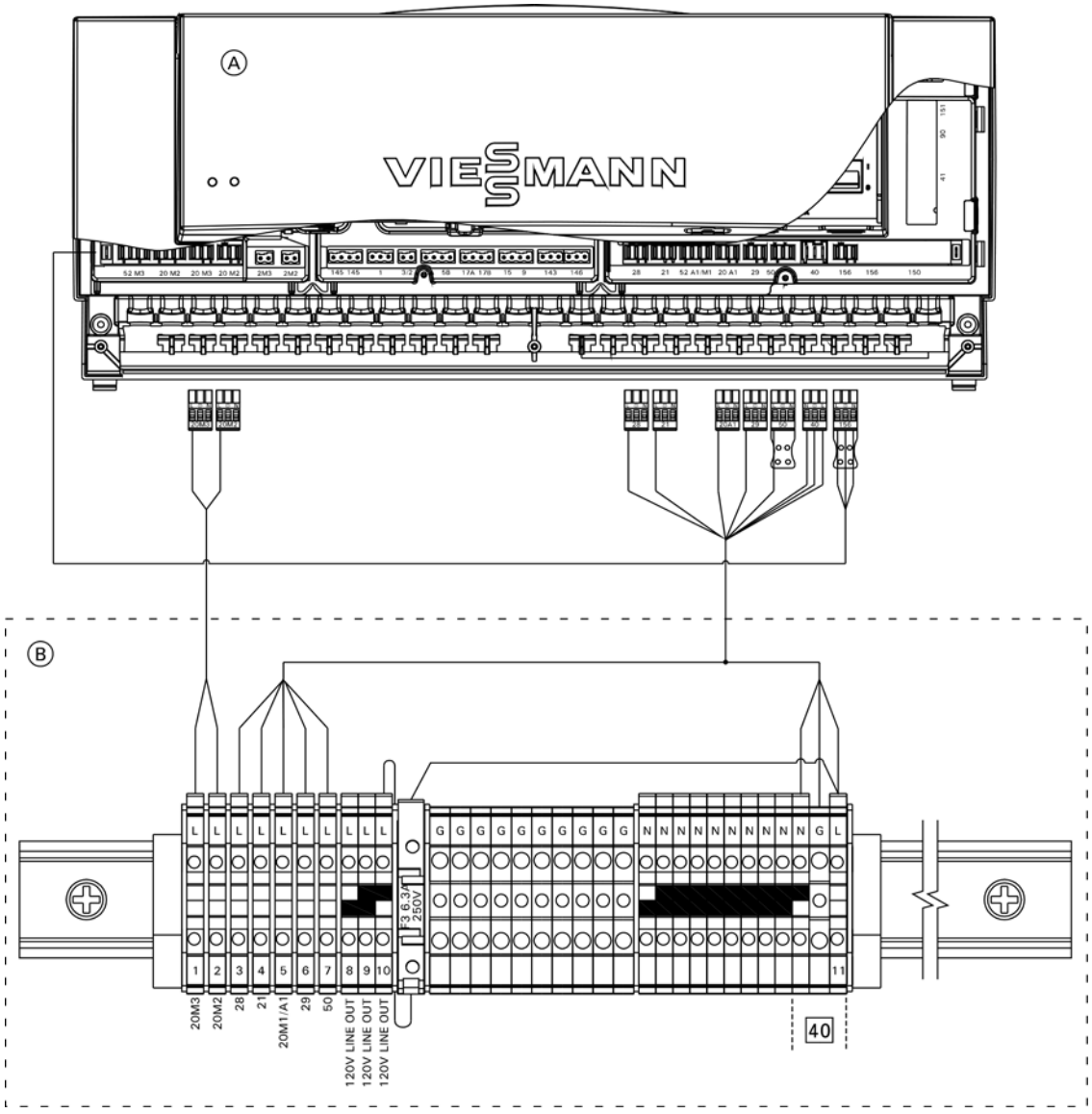
- 1 Outside temperature sensor
- 3/2 Common supply/ low loss header, temperature sensor
- 5 A DHW tank temperature sensor
- 5 B DHW tank temperature sensor 2 for primary store system (accessory)
- 17 B Temperature sensor primary store system (accessories)
- 143 External hook-ups
- 145 KM BUS participant (Vitotronic 200 and accessories, e.g. Vitotrol remote controls)
- 146 External hook-ups
- LON LON BUS, connecting cable for data exchange with the Vitotronic 200-H and the Vitocom

Main PCB 120V ~

- 20 A1 Heating circuit pump or Primary pump, primary store system
- 21 DHW pump
- 28 DHW recirculation pump
- 29 System pump
- 40 Power supply
- 50 Central fault message
- 52 A1 Motor for 3-way mixing valve, primary store system
- 156 Internal power supply for mixing valve extension PCB

Electrical connections on the Vitotronic 200 see installation instructions, Vitodens 200-W.

Overview of Electrical Connections, Vitotronic 300-K *(continued)*



Legend

Ⓐ Vitotronic 300-K
Ⓑ Junction box

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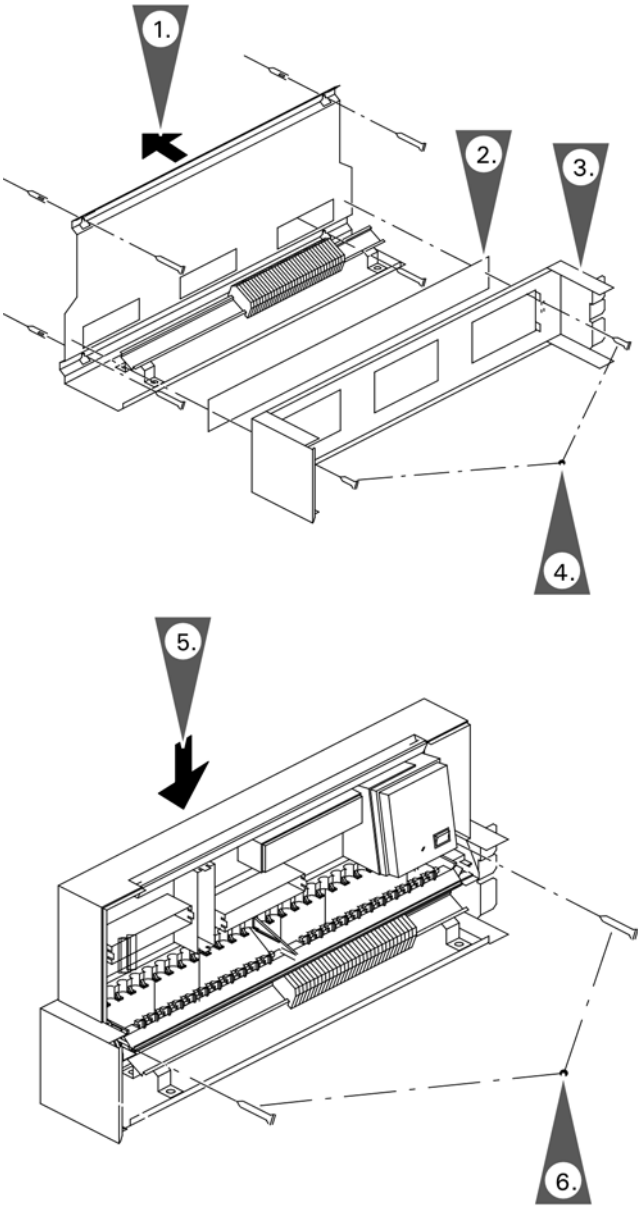
Mounting the Control Unit

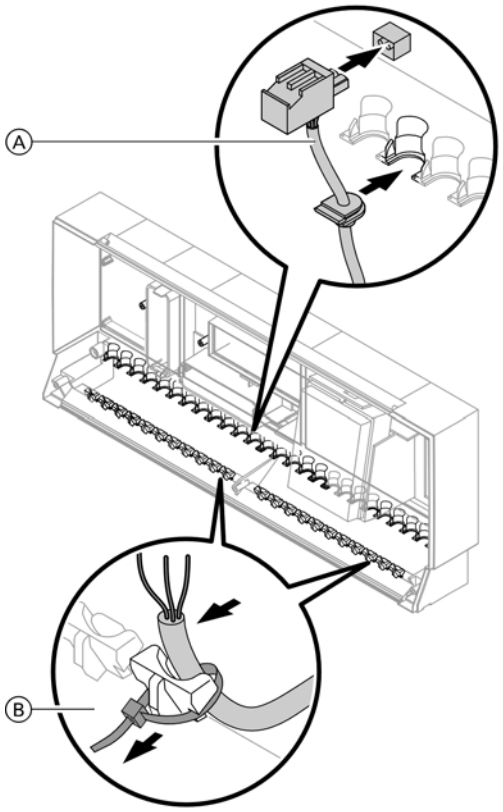


1. Fasten metal backplate onto mounting surface with four fasteners.
2. Position the mid plate between backplate and connection enclosure.
3. Install the mid plate and connection enclosure onto backplate.
4. Fasten connection enclosure and mid plate onto backplate with two fasteners.
5. Install control rear section onto connection enclosure housing. Hook control onto backplate tabs and pivot downwards.
6. Fasten control rear section onto connection enclosure with two fasteners.

Installing the Heating Circuit Ext. Mod., Heating Circuits 2 and 3 (Accessory)

See separate Installation Instructions.

Inserting Cables/Leads and Applying Strain Relief

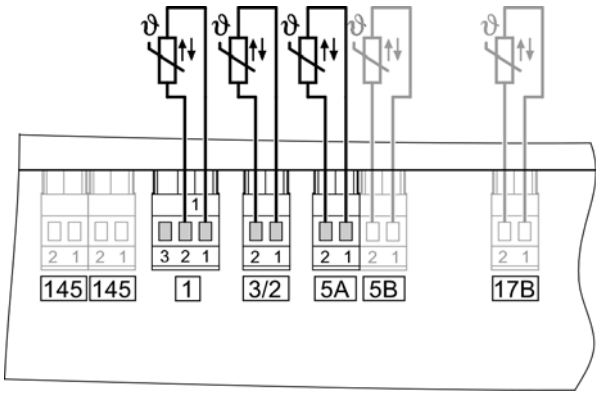


Run the cables from the junction box into the control unit. Apply strain relief to cables.

Cables with moulded strain relief clamp:
Connect cable and strain relief clamp.
OR
Fasten cable to the cable lead with cable tie.

Legend
Ⓐ Cables with moulded strain relief
Ⓑ On-site cables; strip up to 4 in. (100 mm) insulation.

Connecting Sensors



Installation point for outside temperature sensor

- North or north-western wall, 6.6 to 8.2 ft. (2 to 2.5 m) above ground level; in multistorey buildings, in the upper half of the second floor
- Not above windows, doors or ventilation outlets
- Not immediately below balconies or gutters
- Never cover over

Outside temperature sensor connection

Two-wire communication cable, max. 120 ft. (35 m) length, AWG 18.

Legend

[1]	Outside temperature sensor
[3]/[2]	Common supply/ low loss header, temperature sensor,
[5][A]	DHW tank temperature sensor 1
[5][B]	DHW tank temperature sensor 2 for primary store system (optional accessory, not used)
[17][B]	Temperature sensor primary store system (optional accessory, not used)

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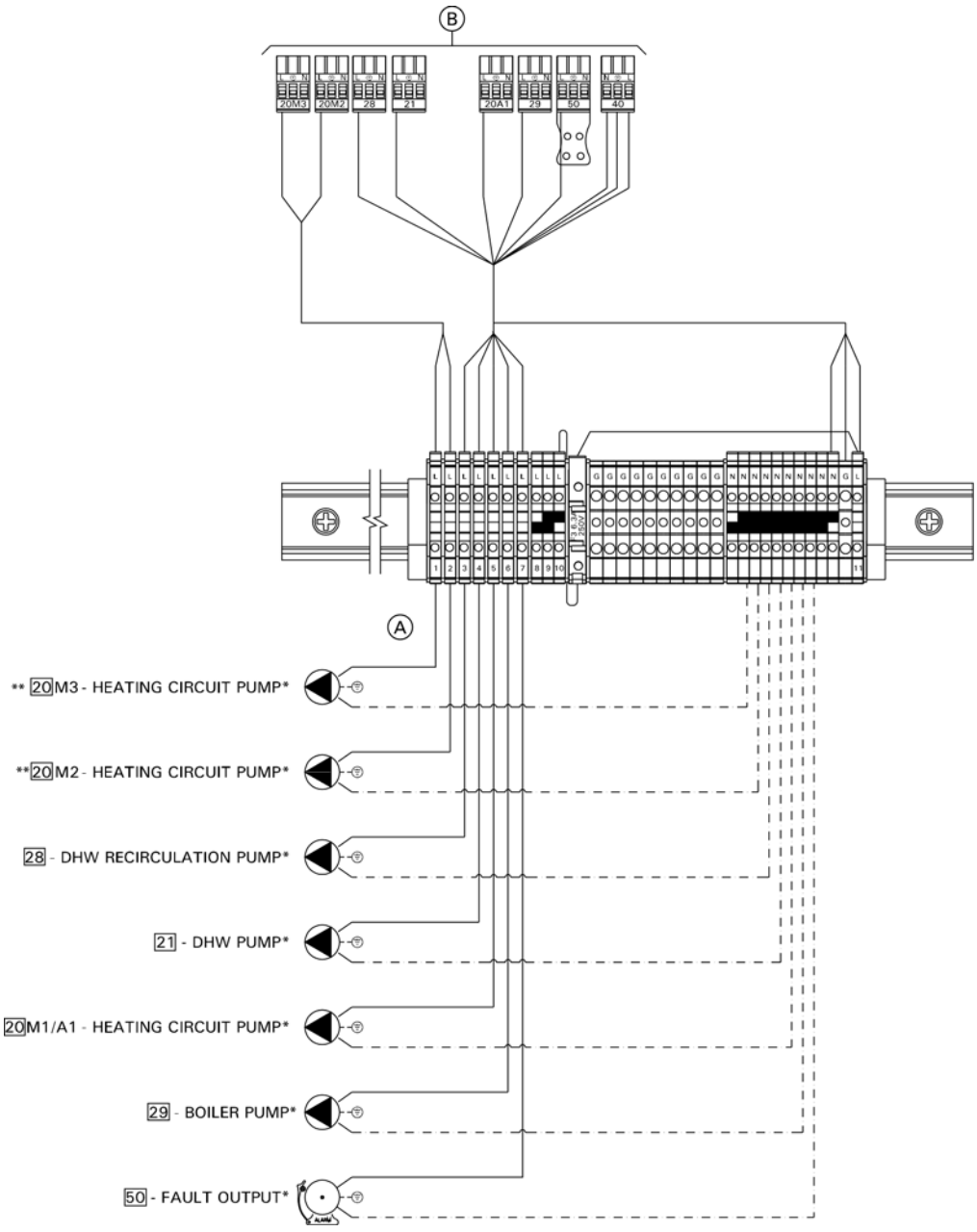
Connecting Pumps



Legend

Ⓐ 120V outputs
Ⓑ To the control unit

Rated current: 2 A~

* Maximum pump output 6FLA shared between all 120V outputs.

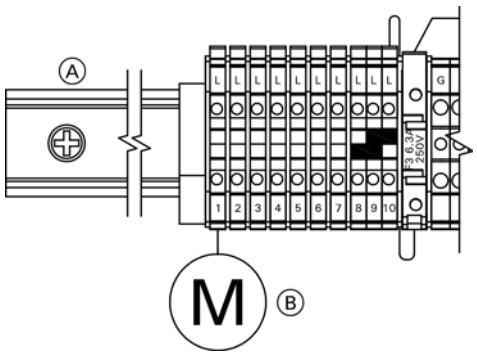
** In conjunction with extension for heating circuits 2 and 3 (accessory).

Pumps 120V

Available pump connections

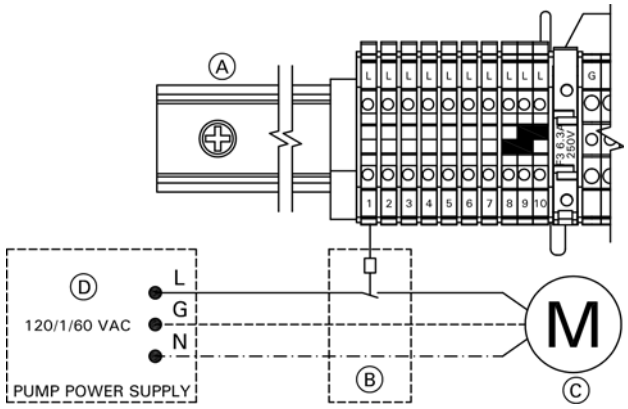
20 A1	High temperature circuit pump/ primary store pump
20 M2	Heating circuit 2 pump
20 M3	Heating circuit 3 pump
21	DHW pump
28	DHW recirculation pump
29	System pump

120V External Connection



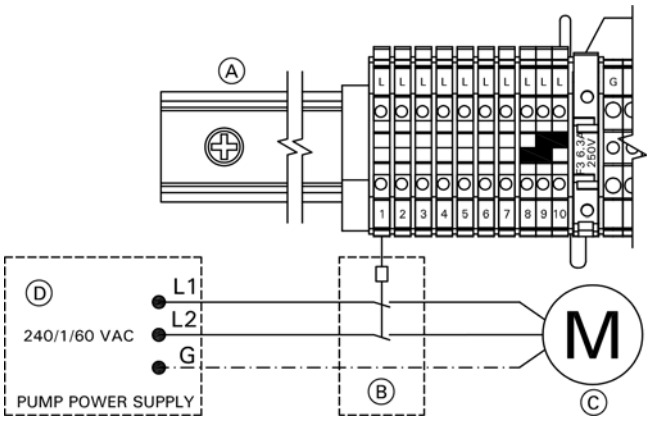
120V pumps with an amperage draw of <2FLA

Ⓐ Din rail
Ⓑ Pump



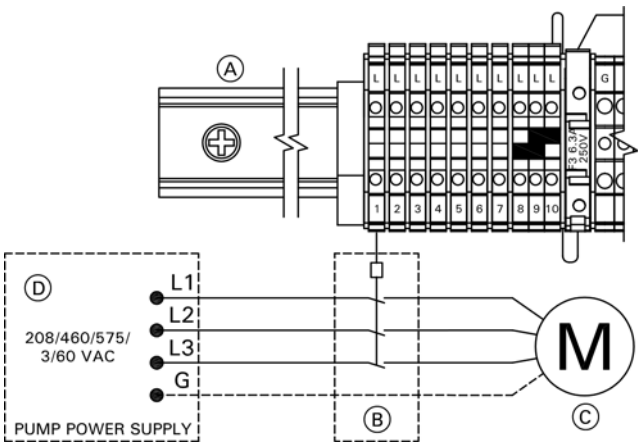
120V pumps with an amperage draw of >2FLA

Contactor specification 120VAC 1A
Ⓐ Din rail
Ⓑ Contactor/relay (field supplied)
Ⓒ Pump
Ⓓ Power supply w/disconnect and protection



240V pumps

Contactor specification 120VAC 1A
Ⓐ Din rail
Ⓑ Contactor/relay (field supplied)
Ⓒ Pump
Ⓓ Power supply w/disconnect and protection



208/460/575V 3 phase pumps

Contactor specification 120VAC 1A
Ⓐ Din rail
Ⓑ Contactor/relay (field supplied)
Ⓒ Pump
Ⓓ Power supply w/disconnect and protection

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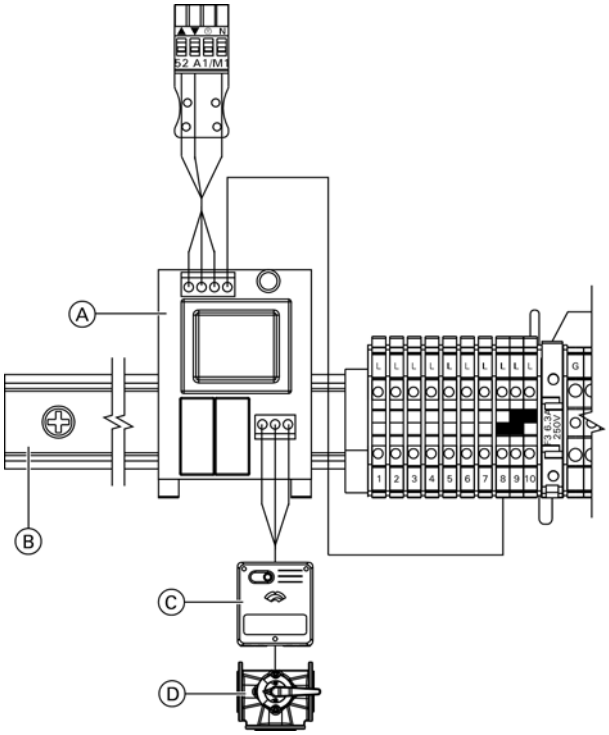
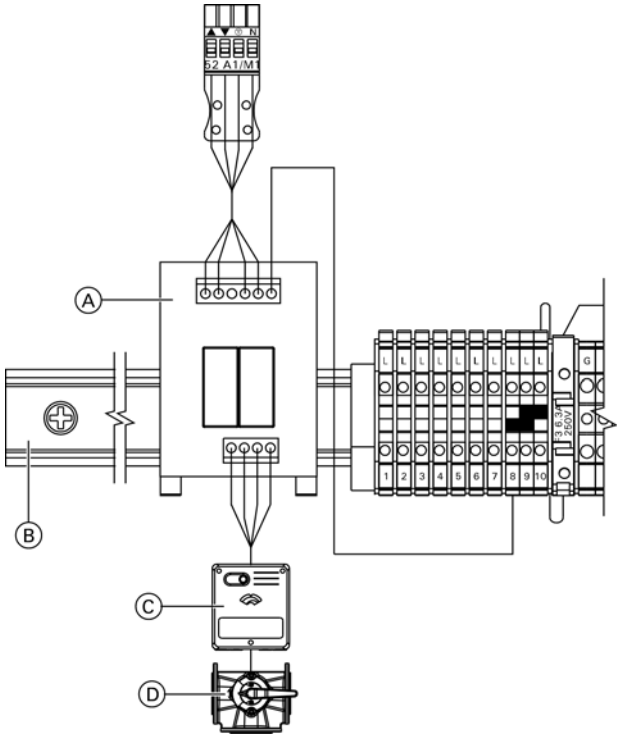
Connecting Actuators



Legend
Ⓐ 24V Mixing Valve Adaptor
Ⓑ DIN Rail (in junction box)
Ⓒ 24V Valve Actuator
Ⓓ Valve



Legend
Ⓐ 120V Mixing Valve Adaptor
Ⓑ DIN Rail (in connection enclosure)
Ⓒ 120V Valve Actuator
Ⓓ Valve

120V Valve Adaptor

Rated voltage:	120VAC
Rated current:	max. 0.1 FLA

24V Valve Adaptor

Rated voltage:	24VAC
Rated current:	max. 0.15 FLA

Operating time: 5 to 199 sec. selected via coding address “40”.

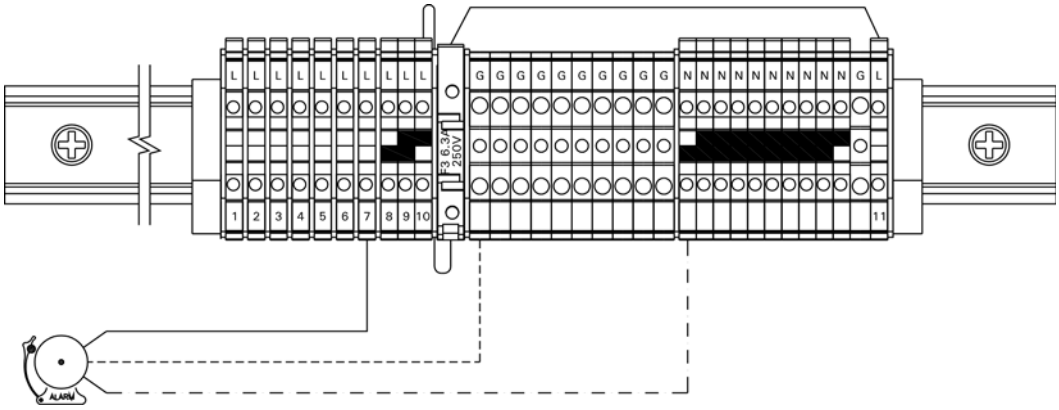
Available connections

52 A1 Motor for 3-way mixing valve, primary store system
52 M2 For heating circuit 2
52 M3 For heating circuit 3

Rated voltage:	120V~
Rated current Max.:	0.1 A~
Motor runtime for 3-way mixing valve:	10 to 255 sec, adjustable via coding addresses “6A” in the”DHW”group, “C3” in the HC2 group and “C3” in the HC3 group.

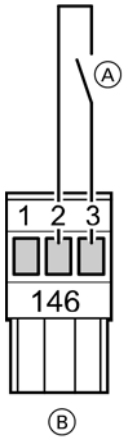
1. Disconnect power to control.
2. Install 120V or 24V valve adaptor on DIN rail inside connection enclosure.
3. Insert the plug 52 into socket 52 on the Vitotronic control.
4. Fasten cable with tie.
5. Connect black wire of the adaptor to terminals 8,9 or 10 on the Din rail.
6. Connect valve actuator wires to the adaptor terminals

Connecting the Central Fault Message Facility



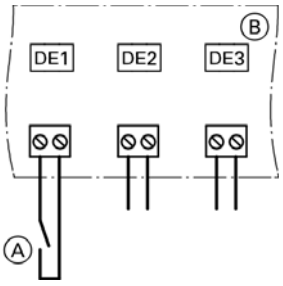
Rated voltage	120V ~
Rated current	max. 2 A ~

External Demand via Switching Contact



Legend

Ⓐ Dry contact
Ⓑ Plug 146 of the control unit



Legend

Ⓐ Dry contact
Ⓑ Extension EA1

Connection options:

- Connection at plug 146
- Extension EA1 (accessory, see page 93)

Connection

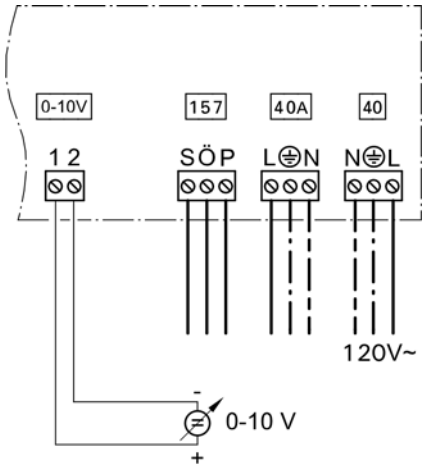
Note: 'Live' contacts lead to short circuits or phase failure. The external connection must be potential-free.

When the contact is closed, burner operation is load-dependent. The supply water is heated to the value set in the coding address "9B" in the "General" group on the Vitotronic 300 -K.
The supply water temperature is limited by this set value and the electronic supply temperature maximum limit (coding address "06" in the "Boiler" group on the Vitotronic 200).

Codes

Plug 146	No code required.
Extension EA1	Set "5D", "5E" or "5F" in the "General" group to 2.

External Demand via 0–10V Input

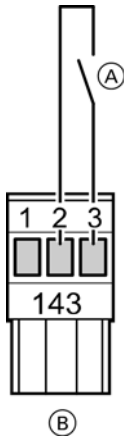


Demand for a system supply temperature set value.
Connection to input 0 -10V at extension EA1 (accessory).
See page 93.

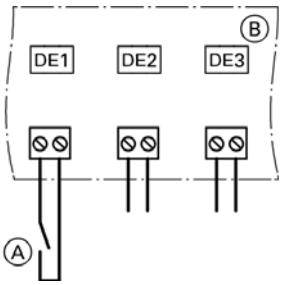
0 - 1V ≙ no default set supply temperature
1V ≙ set value 50°F (10°C)
10V ≙ set value 212°F (100°C)

Note: For optional temperature range settings refer to coding address 1E

External Blocking via Switching Contact



Ⓐ Dry contact
Ⓑ Plug 143 of the control unit



Legend
Ⓐ Dry contact
Ⓑ Extension EA1

Connection options:
- Connection at plug 143
- Extension EA1 (accessory, see page 93)

Connection

Note: 'Live' contacts lead to short circuits or phase failure.
The external connection must be potential-free.

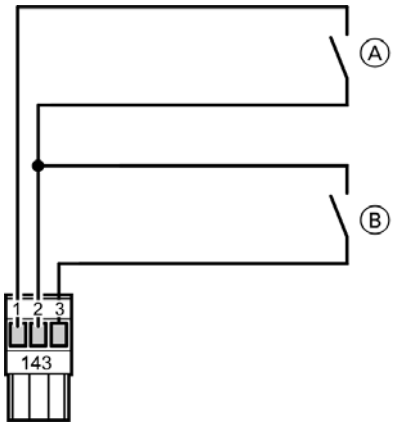
The burner is shut down when the contact is closed.
The boiler circuit pumps are switched off.

Note: The heating system has no frost protection while it is blocked.
The boiler is not held at the lower boiler water temperature.

Codes

Plug 143	Set coding address "99" in the "general" group.
Extension EA1	Set "5D", "5E" or "5F" in the "General" group to 3 or 4.

External “Mixing Valve Close”/”Mixing Valve Open”



Legend
Ⓐ External “Mixing valve open” (dry contact)
Ⓑ External “Mixing valve close” (dry contact)

Connection at plug 143

The mixing valves are opened Ⓐ or closed Ⓑ when the contact is closed.

Note: ‘Live’ contacts lead to short circuits or phase failure.
The external connection must be potential-free.

Codes

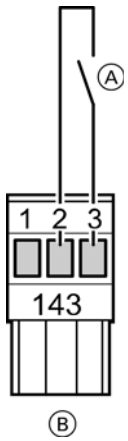
External “Mixing valve open”

Via coding address “9A” in the “General” group, this function is assigned to the heating circuits.

External “Mixing valve close”

Via coding address “99” in the “General” group, this function is assigned to the heating circuits.

External Heating Program Changeover



Ⓐ dry contact
Ⓑ Plug 143 of the control unit

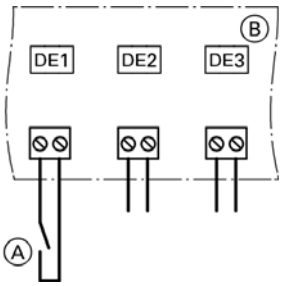
Connection options:
- Connection at plug 143
- Extension EA1 (accessory, see page 93)

Connection

Note: ‘Live’ contacts lead to short circuits or phase failure.
The external connection must be potential-free.

Codes

Plug 143	Via coding address “91” in the “General” group, the function can be assigned to the heating circuits.
Extension EA1	Set “5D”, “5E” or “5F” in the “General” group to 1. Via coding address “D8” in the “Heating circuit...” group, the function can be assigned to the heating circuits.



Legend
Ⓐ dry contact
Ⓑ Extension EA1

The changeover can be separate for heating circuits 1 to 3.

External Heating Program Changeover *(continued)*

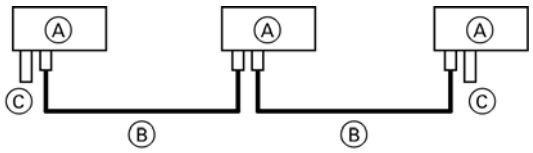
Preselected heating program (Contact open)		Coding		Changed heating program (Contact closed)
⏻	Central heating OFF/DHW OFF	D5:0 (factory set condition)	⇔	Permanent operation with reduced room temperature/ DHW OFF
 or	Central heating OFF/DHW ON	D5:1	⇔	Constant operation with standard room temperature, DHW in accordance with coding address “64”
	Central heating OFF/DHW ON			

Making the LON Connection

The Viessmann LON system is designed for the “Line” BUS topology with a terminator at both ends (accessories).

Observe the cabling requirements for the operation of the LON interface FTT 10-A (see www.echelon.com).

All Viessmann equipment is connected via RJ45 plugs. The Viessmann LON system always requires the cores “1” and “2” and the screen. The cores are interchangeable. The installation is therefore safe from pole errors.

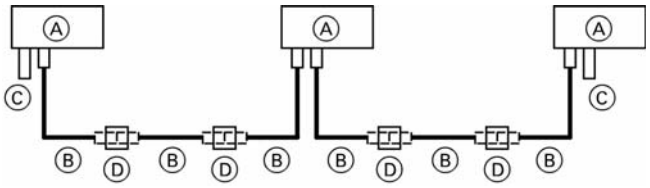


Connection with Viessmann LON cable

The line may be up to ≤ 23 ft. (7 m) long

Legend

Ⓐ Control unit or Vitocom
Ⓑ LON cable, 23 ft. (7 m) long
Ⓒ Terminator



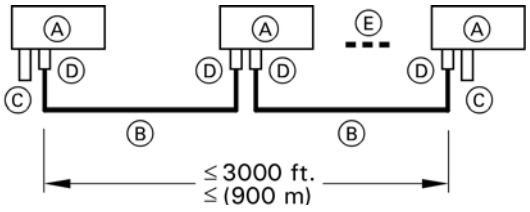
Connection with Viessmann LON cable and coupling

Installation spacing 23 to 69 ft. (7 to 21 m)

Legend

Ⓐ Control unit or Vitocom
Ⓑ LON cable, 23 ft. (7 m) long
Max. 3 cables between 2 appliances
Ⓒ Terminator
Ⓓ LON extension jack

Making the LON Connection *(continued)*



Connection with on-site cable and LON plug

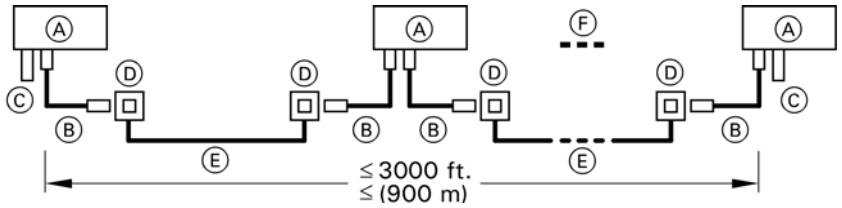
The line may be up to ≤ 3000 ft. (900 m) (with LON plug)

Legend

Ⓐ Control unit or Vitocom
Ⓑ On-site cable
Ⓒ Terminator
Ⓓ LON plug
Ⓔ Up to 99 participants

Connection with LON cable, on-site cable and LON junction box

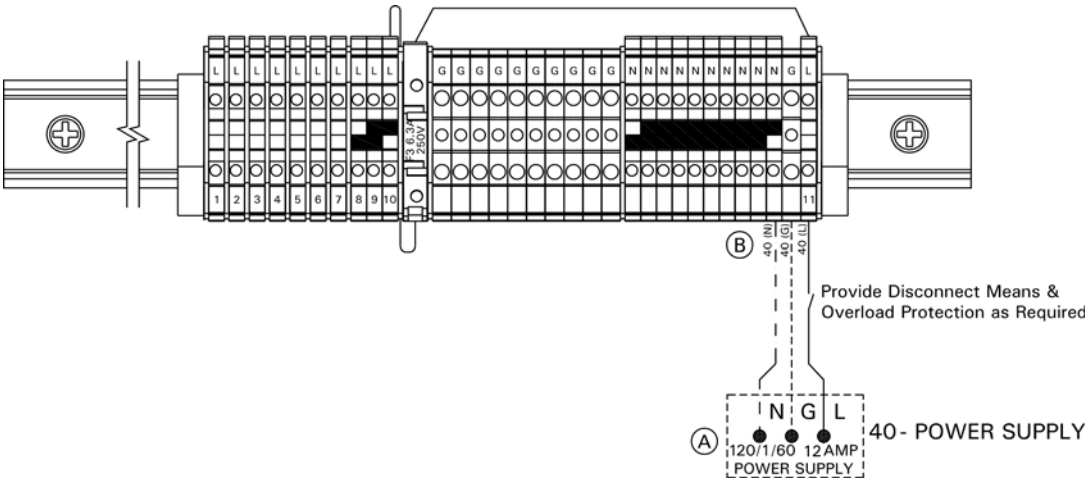
The line may be up to ≤ 3000 ft. (900 m) (with LON junction boxes)



Legend

Ⓐ Control unit or Vitocom
Ⓑ LON cable, 23 ft. (7 m) long
Ⓒ Terminator
Ⓓ LON junction boxes
Ⓔ On-site cable
Ⓕ Up to 99 participants

Power Supply


L L L L L L L L L
G G G G G G G G G
N N N N N N N N N G L
F3.6.3A 250V
1 2 3 4 5 6 7 8 9 10
11
B
40 N
40 G
40 L
Provide Disconnect Means &
Overload Protection as Required
N G L
A
120/1/60 12AMP
POWER SUPPLY
40 - POWER SUPPLY

Legend
L: Line
N: Neutral
G: Ground

Ⓐ Power supply 120VAC, 1PH, 60Hz, provide disconnect means and overcurrent protection as per local codes

Ⓑ DIN terminals N, G and 11 (in junction box)

Ⓒ Junction box

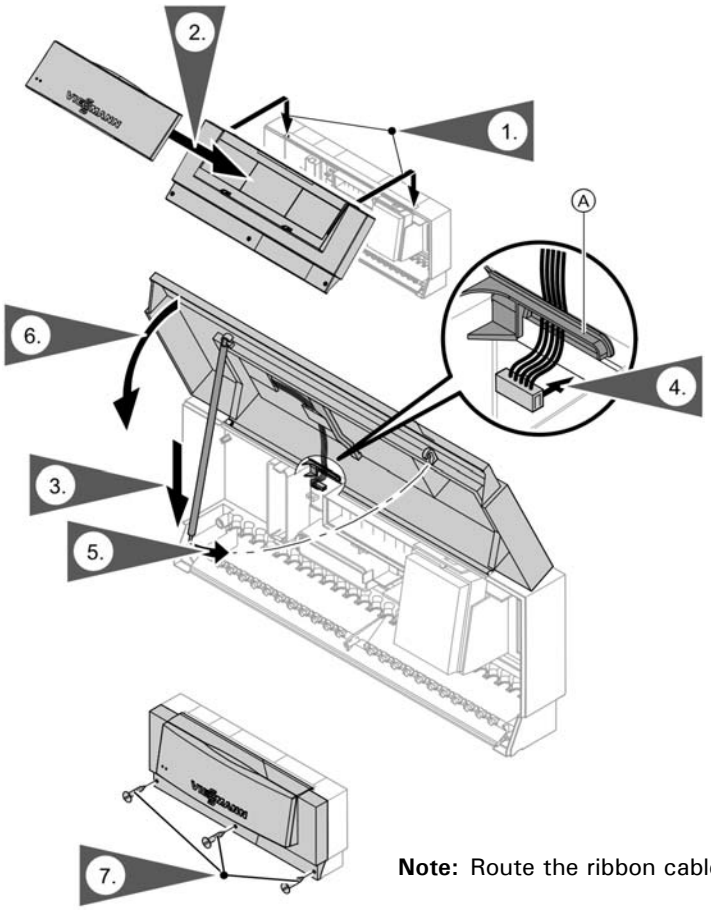
1. Ensure that the main power supply to the control contains overcurrent protection with a minimum rating of 6A and 2-pole disconnect.

⚠ WARNING

The control must be grounded.
Ensure that "L", "N" and "G" are not interchanged.

2. Connect power supply wire to the connection 40 terminals 11, N and G on the DIN rail inside the junction box.

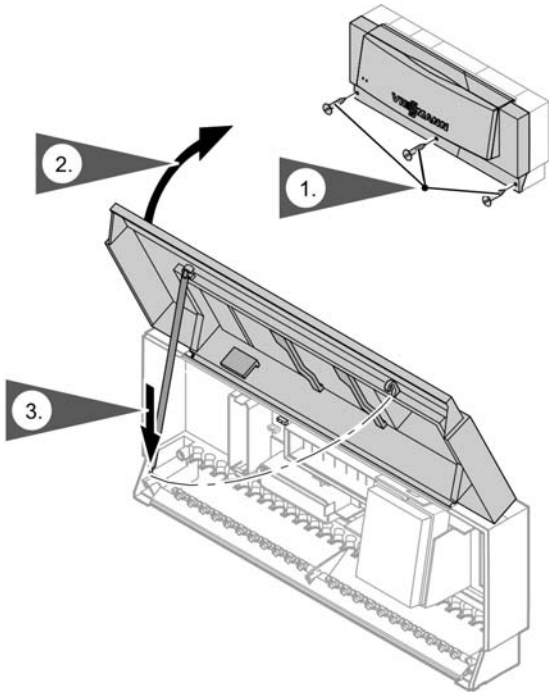
Fitting the Front Part of the Control Unit



Legend
Ⓐ Cable retaining tab

Note: Route the ribbon cable through retainer Ⓐ.

Opening the Control Unit



Changing the Language

At the commissioning stage, the display is in German.

1. "Sprache" (Language) Deutsch DE (German)
2. Select the required language with ▲/▼
3. Accept by pressing OK.

To change the language
Extended menu:

1. ☰
2. "Settings"
3. "Language"
4. Select the required language with ▲/▼
5. Accept by pressing OK.

Set Time and Date

Setting the time and date

During commissioning.

1. Using the ▲/▼ set the current time
2. Accept by pressing OK, this will move to date
3. Using the ▲/▼ set the current date
4. Press OK to complete

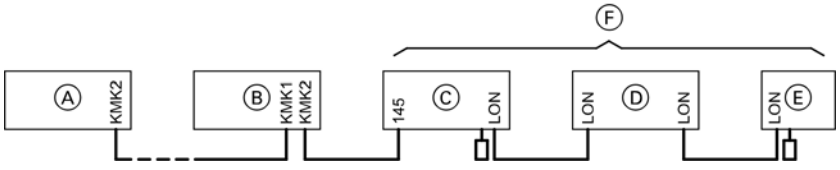
To change the time/date after prolonged time out of use.
Extended menu:

1. ☰
2. "Settings"
3. "Time / Date"
4. Set current time and date (as shown above).

Configuring a Multi Boiler System

Example of a multi boiler system

The cascade communication module must be fitted into every Vitotronic 200 (see page 10).



Legend

Ⓐ Vitotronic 200
Ⓑ Vitotronic 200
Ⓒ Vitotronic 300-K
Ⓓ Vitotronic 200-H
Ⓔ Vitocom
Ⓕ LON system

Configuring a Multi Boiler System *(continued)*

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
Boiler number 1 Code “07:1” (factory set condition)	Boiler number 2 to … Set code “07:2 to …”	--	--	--
With cascade communication module Code “76:1” (automatic recognition)	With cascade communication module Code “76:1” (automatic recognition)	--	--	--
Max. burner output Set coding address “08”	Max. burner output Set coding address “08”	--	--	--
--	--	Number of connected boilers Set code “35”	--	--
--	--	Participant no. 5 Code “77:5”	Participant no. 10 Code “77:10”	Participant no. 98, 99
Control unit is not fault manager Set code “79:0”	Control unit is not fault manager Set code “79:0”	Control unit is fault manager Code “79:1”	Control unit is not fault manager Set code “79:0”	Device is fault manager
--	--	Control unit transmits the time Code “7B:1	The control unit receives the time Set code “81:3”	Device receives the time
--	--	Control unit transmits outside temperature Set code “97:2”	Control unit receives the outside temperature Set code “97:1”	--
--	--	LON participant fault monitoring Code “9C:20”	LON participant fault monitoring Code “9C:20”	--
--	--	Flue gas cascade with positive pressure Set code “7E:1”	--	--

Prior to coding the Vitotronic 200, ensure the boiler is in cascade mode. Refer to page 12.

For the Vitotronic 200, see boiler Service Instructions

1. Press ☰ and **OK** for approximately 4 seconds.
2. Use ▲/▼ to scroll to service and select with **OK**.
3. Use ▲/▼ to scroll to service functions and select with **OK**.
3. Use ▲/▼ to scroll to multi-boiler system and select with **OK**.
4. When complete to exit press ⮌.

Connecting the Control Unit to the LON System

- See also chapter “Configuring multi boiler systems”.
- Vitotronic 300-K and 200-H:
  The LON communication module (accessory) must be plugged in (see parts list).
- The data transfer via the LON system can take several minutes.
- Vitotronic 300-K and 200-H:
  In code 1, set the LON participant number via coding address “77”.
  In one LON system, the same number must not be allocated twice.

Installation and service instructions, Vitotronic 200-H

- Only one Vitotronic may be programmed as fault manager.

Carrying out a LON participant check
Communication with the system devices connected to the fault manager is tested by means of a participant check.

Preconditions:

- The control unit must be programmed as fault manager (code “79:1”).
- The LON participant number must be programmed in all control units.
- The LON participant list in the fault manager must be up to date.

Performing the participant check:

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. “Service functions”
3. “Participant check”
4. Select participant (e.g. participant 12).
   The participant check for the selected participant is initiated.
   - Successfully tested participants are designated with “**OK**”.
   - Unsuccessfully tested participants are designated with “**Not OK**”.

   Note: To carry out a new participant check, create a new participant list with “Delete list?” (participant list is updated).

   Note: The display of the relevant participant during the participant check shows the participant no. and “Wink” for approx. 1 min.

Checking the Heating Circuit Assignment

Select the corresponding heating circuit before making any adjustments.

Matching Coding Addresses to the System Version

In code 1, set the following coding addresses:
"00" System scheme
"35" Number of boilers in the cascade
"36" Minimum limit of the cascade supply temperature
"37" Maximum limit of the cascade supply temperature
"3B" Control type
"3C" Control strategy
"A2" DHW tank priority
"A5" Heating circuit pump logic function (economy mode)
"C5" Minimum limit of the heating circuit supply temperature
"C6" Maximum limit of the heating circuit supply temperature

Check the following coding addresses and adjust accordingly in Code 2:
"39" Permanent lead boiler
"3A" Permanent last boiler
"4C" Function plug 20 A1
"55" DHW tank temperature control function
"77" LON participant number*1
"7A" Central control
"7E" Flue gas cascade
"7F" Detached house or apartment building
"98" Viessmann system number*1
"9C" Monitoring the LON participant number*1

Note: Further adjustment options are listed in codes 1 and 2.

*1 Only in conjunction with Viessmann LON system.

Selecting the Boiler Sequence (if required)

Subject to the codes set in the "cascade" group and internal control calculations, the control unit offers various boiler sequences. The following codes influence the boiler sequence:

"38:..." Changing the lead boiler and the boiler sequence
"39: ..." Permanent lead boiler
"3A: ..." Permanent last boiler
"41" - "44" ECO thresholds
"65", "6F" ECO thresholds
"74", "7D" ECO thresholds

- Via the ECO threshold, every boiler can be blocked or enabled subject to the outside temperature.
- The ECO control is disabled, if the boiler is required to achieve the set supply temperature when enabled boilers have failed.
- At least the lead boiler remains active if all boilers in a system are blocked by the ECO threshold.

*1 Only in conjunction with Viessmann LON system.

Extended menu:

1. Press ☰.
2. "Boiler sequence"
3. Set the required boiler sequence with ▲/▼.
4. Press "**OK**". The setting has been adopted.

Checking Outputs Actuators and Sensors

Testing the relay – Vitotronic 300-K

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. "Actuator test"

The following relay outputs can be controlled subject to system design:

Display		Explanation
"All actuators"	OFF	All actuators are switched off.
"Output 20"	ON	Output 20 enabled.
"Output 52"	Open	--
"Output 52"	Neutr.	--
"Output 52"	Close	--
"DHW tank primary pump"	ON	Output for DHW pump enabled.
"DHW circ. pump"	ON	Output for DHW recirculation pump enabled.
"Output 29"	ON	Output 29 enabled.
"Central fault mess."	ON	--
"Htg circ. pump HC2"	ON	Output for heating circuit pump enabled (heating circuit with mixing valve M2).
"Mixing valve HC2"	Open	Output "Mixing valve open" enabled (heating circuit with mixing valve M2).
"Mixing valve HC2"	Close	Output "Mixing valve close" enabled (heating circuit with mixing valve M2).
"Htg circ. pump HC3"	ON	Output for heating circuit pump enabled (heating circuit with mixing valve M3).
"Mixing valve HC3"	Open	Output "Mixing valve open" enabled (heating circuit with mixing valve M3).
"Mixing valve HC3"	Close	Output "Mixing valve open" enabled (heating circuit with mixing valve M3).
"EA1 output 1"	ON	Contact "P - S" on plug [157] for extension EA1 closed.
"AM1 output 1"	ON	Output 1 enabled.
"AM1 output 2"	ON	Output 2 enabled.
"Solar circuit pump"	ON	Output for solar circuit pump [24] at solar control module, type SM1 enabled.
"Solar circ. pump min"	ON	Output for solar circuit pump [24] at solar control module, type SM1 switched to minimum speed.
"Solar circ. pump max"	ON	Output for solar circuit pump [24] at solar control module, type SM1 switched to maximum speed.
"SM1 output 22"	ON	Output [22] at solar control module, type SM1 enabled.

Information regarding the mixing valve motor rotational direction

The supply temperature must rise when the mixing valve opens. If the temperature drops, either the motor is turning in the wrong direction or the mixing valve set is incorrectly fitted (observe the mixing valve installation instructions).

Vitotronic 200 sensor check

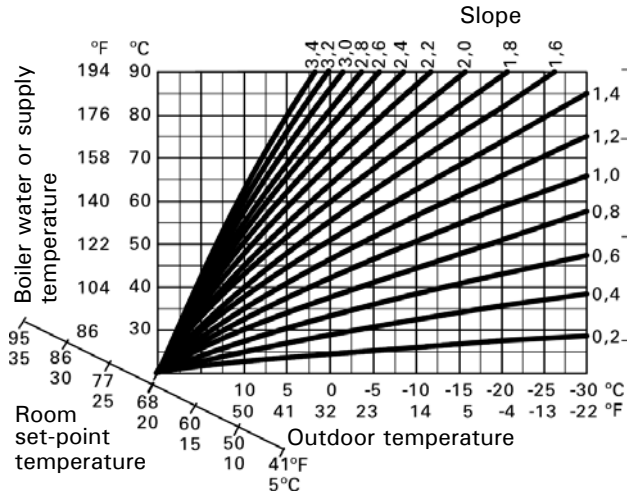
1. Press **OK** and ☰ until service comes up.
2. Use ▲/▼ to scroll to diagnostics and select with **OK**.
3. Use ▲/▼ to scroll to general and select with **OK**.
4. Use ▲/▼ to scroll to relevant sensor and press with **OK** to view.
5. To exit press ⮌.

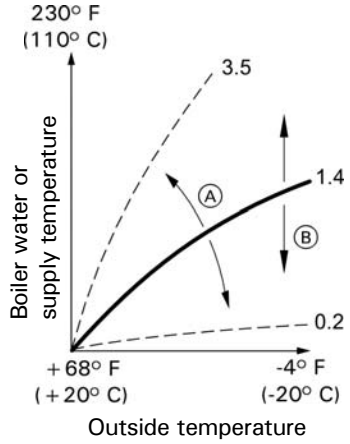
Actuators

1. Press **OK** and ☰ until service comes up.
2. Use ▲/▼ to scroll to actuator test and select with **OK**.
3. Use ▲/▼ to scroll to actuator to be tested and leave highlight (actuator description will change from 'OFF' to 'ON').
4. When complete to exit press ⮌.

Note: The service level is automatically exited after 30 minutes.

Checking Outputs Actuators and Sensors *(continued)*





Legend

Ⓐ Changing the slope

Ⓑ Changing the shift (vertical parallel offset of the heating curve)

Settings in the factory set condition:

- Slope = 1.4
- Shift = 0

The heating curves illustrate the relationship between the outside temperature and the boiler water or supply temperature.
To put it simply: The lower the outside temperature, the higher the boiler water or supply temperature.
The room temperature, again, depends on the boiler water or the supply temperature.

Note: If the heating system includes heating circuits with mixing valves, then the supply temperature of the heating circuit without mixing valve is higher by a selected differential (8 K in the factory set condition) than the supply temperature of the heating circuits with mixing valves.
The differential temperature can be changed at coding address 9F.

Changing the slope and shift

Extended menu:

1. ☰
2. "Heating"
3. Select heating circuit.
4. "Heating curve"
5. "Slope" or "Shift"
6. Select heating curve according to the system requirements.

Checking sensors – Vitotronic 300-K

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. "Diagnosis"
3. Select group (see page 68).
4. Scan actual temperature of the relevant sensor.

Slope setting ranges:

- Underfloor heating systems: 0.2 to 0.8
- Low temperature heating systems: 0.8 to 1.6

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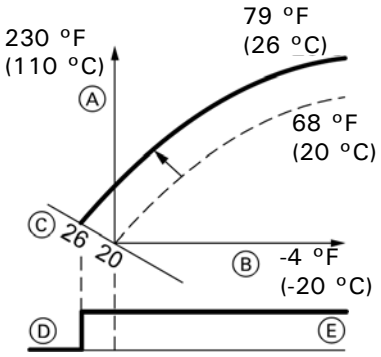
Checking Outputs on Actuators and Sensors *(continued)*



Legend
Ⓐ Boiler water temperature or supply temperature
Ⓑ Outside temperature
Ⓒ Set room temperature
Ⓓ Heating circuit pump “Off”
Ⓔ Heating circuit pump “On”

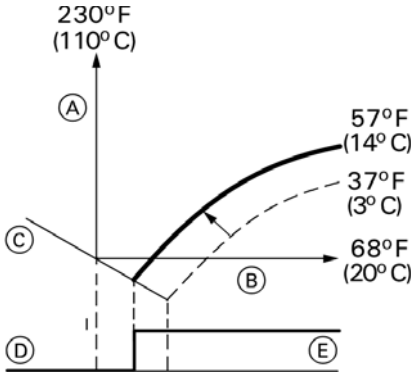
Adjusting the set room temperature

Standard room temperature

Example 1: Adjustment of the standard room temperature from 68 to 79°F (20 to 26°C)

Adjustment of the standard room temperature:

Refer to the Operating Instructions



Legend
Ⓐ Boiler water temperature or supply temperature
Ⓑ Outside temperature
Ⓒ Set room temperature
Ⓓ Heating circuit pump “Off”
Ⓔ Heating circuit pump “On”

Reduced room temperature

Example 2: Adjustment of the reduced room temperature from 37 to 57°F (3 to 14°C)

Adjustment of the reduced room temperature:

Refer to the Operating Instructions

Calling up Coding Level 1 – Vitotronic 200

Prior to coding the Vitotronic 200, ensure the boiler is in cascade mode, (see below).

For the Vitotronic 200, see boiler Service Instructions

1. Press ☰ and **OK** for approximately 4 seconds.
2. Use ▲/▼ to scroll to service and select with **OK**.
3. Use ▲/▼ to scroll to service functions and select with **OK**.
3. Use ▲/▼ to scroll to multi-boiler system and select with **OK**.
4. When complete to exit press ⮌.

Note: Codes are displayed as plain text.

Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.

1. Press **OK** and ☰ for approximately 4 seconds.
2. "Coding level 1"
3. Select group of required coding address:
   - "General"
   - "Boiler"
   - "All codes std device"

   In this group, all coding addresses from coding level 1
4. Select coding address.
5. Select value according to the following tables and confirm with **OK**.
6. If you want to reset all codes to their factory setting: Select "Standard setting" in "Coding level 1".
   Note: This also resets codes from coding level 2.

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"General" Group

Coding			
Coding in the factory setting		**Possible change**	
System design (boiler connected to cascade)			
00:0	--	00:1 to 00:10	Do Not Adjust
Lock out controls			
8F:0	Operation in the standard menu and extended menu enabled. **Note:** The respective code is only activated when you exit the service menu.	8F:1	Operation in standard menu and extended menu blocked. Emissions test mode can be enabled.
		8F:2	Operation enabled in the standard menu and blocked in the extended menu. Emissions test mode can be enabled.
Set supply temperature for external demand			
9B:70	Set supply temperature for external demand 158°F (70°C)	9B:0 to 9B:127	Set supply temperature for external demand adjustable from 32 to 260°F (0 to 127°C) (limited by boiler-specific parameters).

"Boiler" Group

Coding			
Coding in the factory setting		**Possible change**	
Single/multi boiler system			
01:2	Multi boiler system with Vitotronic 300 -K, MW2B control.	01:2	Do Not Adjust
Boiler number			
07:1	Boiler number in multi boiler systems	07:2 to 07:8	Boiler number 2 to 8 in multi-boiler systems.
Burner service in 100 hours			
21:0	No service interval (hours run) selected	21:1 to 21:100	Number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h One adjusting step ≙ 100 h.
Service interval in months			
23:0	No time interval for burner service	23:1 to 23:24	Interval adjustable from 1 to 24 months.
Service status			
24:0	No "Service" display	24:1	"Service" display (the address is automatically set and must be manually reset after a service has been carried out).
Filling/Venting			
2F:0	Venting (bleeding) program/fill program disabled	2F:1	Venting (bleeding) program enabled.
		2F:2	Fill program enabled.

Calling up Coding Level 1 – Vitotronic 300-K

1. Press ☰.
2. Use ▲/▼ to scroll to service and select with **OK**.
3. Use ▲/▼ to scroll to service functions and select with **OK**.
3. Use ▲/▼ to scroll to multi-boiler system and select with **OK**.
4. When complete to exit press ⮌.

Note:

- On Vitotronic 300-K units, codes are displayed as plain text.
- Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.
- Heating systems with one heating circuit without mixing valve and one or two heating circuits with mixing valve: The heating circuit without mixing valve is designated "Heating circuit 1" and the heating circuits with mixing valve as "Heating circuit 2" or "Heating circuit 3". If the heating circuits were given individual designations, the selected designation and "HC1", "HC2" or "HC3" appear instead.

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. "Coding level 1"
3. Select group of required coding address:
   - "General"
   - "Cascade"
   - "DHW"
   - "Solar"
   - "Heating circuit 1/2/3"
   - "All codes std device"
     In this group, all coding addresses from coding level 1 (except the coding addresses from the "Solar" group) are displayed in ascending order.
4. Select coding address.
5. Select value according to the following tables and confirm with **OK**.
6. If you want to reset all codes to their factory set condition:
   Select "Standard setting" in "Coding level 1".

   Note: This also resets codes from coding level 2.

"General" Group

Coding

Coding in the factory set condition		Possible change	
System design			
00:1	System version 1: One heating circuit without mixing valve A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixing valve A1 (heating circuit 1), with DHW heating (code is adjusted automatically)
3	2,3	One heating circuit with mixing valve M2 (heating circuit 2), without DHW heating
4	2,3	One heating circuit with mixing valve M2 (heating circuit 2), with DHW heating
5	2,3,4	One heating circuit without mixing valve A1 (heating circuit 1) and one heating circuit with mixing valve M2 (heating circuit 2), without DHW heating (code is adjusted automatically)
6	2,3,4	One heating circuit without mixing valve A1 (heating circuit 1) and one heating circuit with mixing valve M2 (heating circuit 2), with DHW heating (code is adjusted automatically)
7	5	One heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), without DHW heating
8	5	One heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), with DHW heating
9	5	One heating circuit without mixing valve A1 (heating circuit 1), one heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), without DHW heating (code is adjusted automatically)
10	5	One heating circuit without mixing valve A1 (heating circuit 1), one heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), with DHW heating (code is adjusted automatically)

Coding in the factory set condition		Possible change	
Participant number			
77:5	LON participant number	77:2 to 77:99	LON participant number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 98 = Vitotronic 200-H 99 = Vitocom **Note:** Allocate each number only once.
Detached house/apartment building			
7F:1	Detached house	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible
Lock out controls			
8F:0	All control elements active	8F:1	All control elements locked out
		8F:2	Only standard settings can be controlled
Set supply temperature for external demand adjustable from			
9B:70	Set supply temperature for external demand 158°F (70°C)	9B:0 to 9:127	Set supply temperature for external demand adjustable from 32 to 260°F (0 to 127°C) (limited by boiler-specific parameters)

"Cascade" Group

Coding

Coding in the factory set condition		Possible change	
Number of boilers in cascade			
35:4	4 boilers connected to the Vitotronic 300-K	35:1 to 35:8	1 to 8 boilers connected to the Vitotronic 300-K
Min. system supply temperature			
36:0	Electronic minimum system supply temperature limit set to 32°F (0°C)	36:1 to 36:127	Electronic minimum system supply temperature limit adjustable from 32 to 260°F (0 to 127°C)
Max. system supply temperature			
37:80	Electronic maximum system supply temperature limit set to 176°F (80°C)	37:20 to 37:127	Electronic maximum system supply temperature limit adjustable from 68 to 260°F (20 to 127°C)
Control type			
3B:1	Stand-alone parallel boiler connection with supply temperature sensor	3B:0	Stand-alone parallel boiler connection without supply temperature sensor
Control strategy			
3C:0	Condensing strategy (see page 81)	3C:1	Conventional boiler strategy 1 (see page 81)
		3C:2	Conventional boiler strategy 2 (see page 81)

"DHW" Group

Coding

Coding in the factory set condition		Possible change	
Set DHW temperature reheating suppression			
67:40	For solar DHW heating: Set DHW temperature 104°F (40°C). Reheating is suppressed above the selected set temperature (DHW heating blocked by the boiler).	67:0 to 67:95	Set DHW temperature adjustable from 32 to 203°F (0 to 95°C) (limited by boiler-specific parameters)
Enable DHW recirculation pump			
73:0	DHW recirculation pump: "ON" according to time program	73:1 to 73:6	"ON" from once per hour for 5 min. up to 6 times per hour for 5 min. during the time program
		73:7	Constantly "ON"

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"Solar" Group

Note: The solar group is only displayed if a solar control module, type SM1, is connected.

Coding

Coding in the factory set condition		Possible change	
Speed control solar circuit pump			
02:0	Solar circuit pump (multi stage) without speed control by solar control module SM1.	02:1	Solar circuit pump (multi stage) is speed-controlled with wave pack control.
		02:2	Solar circuit pump is speed-controlled with PWM control.
DHW tank maximum temperature			
08:60	The solar circuit pump stops when the actual DHW temperature reaches the maximum DHW tank temperature 140°F (60°C).	08:10 to 08:90	The maximum DHW tank temperature is adjustable from 50 to 194°F (10 to 90°C).
Stagnation time reduction			
0A:5	To protect system components and heat transfer medium: the speed of the solar circuit pump is reduced if the actual DHW temperature is 5 K below the maximum DHW tank temperature.	0A:0	Stagnation time reduction is disabled.
		0A:1 to 0A:40	Value for stagnation time reduction is adjustable from 1 to 40 K.
Flow rate solar circuit			
0F:70	The solar circuit flow rate at maximum pump speed is 1.8 GPM (7 L/min).	0F:1 to 0F:255	Flow rate adjustable from 0.02 to 6.76 GPM (0.1 to 25.5 L/min); 1 step ≙ 0.02 GPM (0.1 L/min).
20:0	No extended control functions enabled.	20:1	Additional function for DHW heating.
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and auxiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function.
		20:6	Thermostat function and auxiliary function.
		20:7	Solar heating via external heat exchanger without additional temperature sensor.
		20:8	Solar heating via external heat exchanger with additional temperature sensor.
		20:9	Solar heating of two DHW tanks.

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group

Coding

Coding in the factory set condition		Possible change	
Priority DHW heating			
A2:2		A2:0	Without DHW tank priority applicable to heating circuit pump and mixing valve
		A2:1	DHW tank priority only applicable to mixing valve
		A2:3 to A2:15	No function
Economy function outside temperature			
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" when the outside temperature (AT) is 1 K higher than the set room temperature (RT_{set}) $AT > RT_{set} + 1\ K$	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF"; see the following table

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump "OFF"
1	$AT > RT_{set} + 5\ K$
2	$AT > RT_{set} + 4\ K$
3	$AT > RT_{set} + 3\ K$
4	$AT > RT_{set} + 2\ K$
5	$AT > RT_{set} + 1\ K$
6	$AT > RT_{set}$
7 to 15	$AT > RT_{set} - 1\ K$ to $AT > RT_{set} - 9\ K$

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
Extended economy function mixing valve			
A7:0	Without mixing valve economy function (only for heating circuits with mixing valve)	A7:1	With mixing valve economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": - If the mixing valve has been attempting to close for longer than 20 min. Heating circuit pump "ON": - If the mixing valve changes to control function - If there is a risk of frost
Pump idle time, transition reduced mode			
A9:7	With pump idle time: Heating circuit pump "OFF" in case of set value modification by changing the operating mode or changing the set room temperature	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time; adjustable from 1 to 15
Weather-compensated/room temperature hook-up			
B0:0	With remote control: Heating mode/reduced mode: weather-compensated (change the code only for the heating circuit with mixing valve)	B0:1	Heating mode: weather compensated Reduced mode: with room temperature hook-up
		B0:2	Heating mode: with room temperature hook-up Reduced mode: weather compensated
		B0:3	Heating mode/reduced mode: with room temperature hook-up
Economy function room temperature			
B5:0	With remote control: no room temperature-dependent heating circuit pump logic function (change code only for heating circuit with mixing valve)	B5:1 to B5:8	Heating circuit pump logic function, see the following table:

Parameter address B5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	**Heating circuit pump "ON"**
1	$AT > RT_{set} + 5\ K$	$RT_{actual} < RT_{set} + 4\ K$
2	$AT > RT_{set} + 4\ K$	$RT_{actual} < RT_{set} + 3\ K$
3	$AT > RT_{set} + 3\ K$	$RT_{actual} < RT_{set} + 2\ K$
4	$AT > RT_{set} + 2\ K$	$RT_{actual} < RT_{set} + 1\ K$
5	$AT > RT_{set} + 1\ K$	$RT_{actual} < RT_{set}$
6	$AT > RT_{set}$	$RT_{actual} < RT_{set} - 1\ K$
7	$RT_{actual} > RT_{set} - 1\ K$	$RT_{actual} < RT_{set} - 2\ K$
8	$RT_{actual} > RT_{set} - 2\ K$	$RT_{actual} < RT_{set} - 3\ K$

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
Min. supply temperature heating circuit			
C5:20	Electronic minimum supply temperature limit	C5:1 to C5:127	Minimum limit adjustable from 34 to 260°F (1 to 127°C) (limited by boiler-specific parameters)
Max. supply temperature heating circuit			
C6:75	Electronic maximum supply temperature limit set to 167°F (75°C)	C6:10 to C6:127	Maximum limit adjustable from 50 to 260°F (10 to 127°C) (limited by boiler-specific parameters)
Heating program - changeover			
D5:0	External heating program changeover changes to "Constant operation with reduced room temperature" or "Standby mode"	D5:1	The external heating program changeover changes to "Constant operation with standard room temperature" (subject to coding address 3A, 3B and 3C)
Ext. heating program changeover to heating circuit			
D8:0	No heating program changeover via extension EA1	D8:1	Heating program changeover via input DE1 at extension EA1
		D8:2	Heating program changeover via input DE2 at extension EA1
		D8:3	Heating program changeover via input DE3 at extension EA1
Slab curing function (Not used)			
F1:0	Slab curing function disabled. **(Not used)**	F1:1 to F1:6	Slab curing function adjustable in accordance with 6 optional temperature/time profiles **(Not used)**
		F1:15	Constant supply temperature 68°F (20°C)
Party mode time limit			
F2:8	Time limit for party mode or external heating program changeover via pushbutton: 8 h *2	F2:0	No time limit for party mode*2
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h*2

*2 Party mode ends automatically in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
Start temperature raising			
F8:-5	Temperature limit for terminating reduced mode 23°F (-5°C), see example on page 83. Observe the setting of coding address "A3".	F8: + 10 to F8:-60	Temperature limit adjustable from + 50 to -76°F (+ 10 to -60°C)
		F8:-61	Function disabled
End temperature raising			
F9:-14	Temperature limit for raising the reduced set room temperature 7°F (-14°C), see example on page 84.	F9 + 10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from + 50 to -76°F (+ 10 to -60°C)
Set supply temperature increase			
FA:20	Raising the set boiler water temperature or the set supply temperature when changing from operation with reduced room temperature to operation with standard room temperature, by 20%. See example on page 84.	FA:0 to FA:50	Temperature rise adjustable from 0 to 50%
Duration set supply temperature increase			
FB:30	Duration for raising the set boiler water temperature or the set supply temperature (see coding address "FA") 60 min. See example on page 82.	FB:0 to FB:150	Duration adjustable from 0 to 300 min.; 1 step ≙ 2 min.

Calling up Coding Level 2 – Vitotronic 200

Prior to coding the Vitotronic 200, ensure the boiler is in cascade mode (see below).

For the Vitotronic 200, see boiler Service Instructions

1. Press ☰ and **OK** for approximately 4 seconds.
2. Use ▲/▼ to scroll to service and select with **OK**.
3. Use ▲/▼ to scroll to service functions and select with **OK**.
3. Use ▲/▼ to scroll to multi-boiler system and select with **OK**.
4. When complete to exit press ⮌.

Note: At coding level 2, all codes are accessible, including the codes at coding level 1.

Codes that have not been assigned due to the heating system equipment level or the setting of other codes are not displayed.

1. Press **OK** and ☰ simultaneously for approximately 4 seconds.
2. Press **OK** and ⮌ simultaneously for approximately 4 seconds.
3. "Coding level 2"
4. Select group of required coding address:
   - "General"
   - "Boiler"
5. Select coding address.
6. Select value according to the following tables and confirm with "**OK**".
7. If you want to reset all codes to their factory setting: Select "Standard setting" in "Coding level 2".

   Note: This also resets codes at coding level 1.

"General" Group

Select "General"

Coding

Coding in the factory setting		**Possible change**	
00:0	--	00:1 to 00:10	Do Not Adjust
11:≠ 9	No access to the coding addresses for the combustion controller parameters	11:9	Access open to the coding addresses for the combustion controller parameters.
2A:0	Without wireless outside temperature sensor	2A:1	With wireless outside temperature sensor (automatic recognition).
		2A:2	Wireless outside temperature sensor not used.
2D:0	Do Not Adjust	--	--
30:3	When changing from a single boiler to a multi boiler operation, the coding address may automatically reset to 30:3. To prevent continuous boiler pump operation, adjust the coding address for each boiler to 30:0.	30:0	Coding address should be set to 30:0, if not adjust to 30:0
32:0	Without extension AM1	32:1	With extension AM1 (automatic recognition).
35:0	Without extension EA1	35:1	With extension EA1 (automatic recognition).
36:0	Function, output [157] at extension EA1: Fault message	36:1	Function output [157]: Accessories pump.
		36:2	Function output [157]: DHW recirculation pump.
39:2	Function output [21]: Circulation pump for DHW tank heating	39:0	Function output [21]: DHW recirculation pump.
		39:1	Function output [21]: Heating circuit pump.
3A:0	Function input DE1 at extension EA1: Not assigned	3A:1	Function input DE1: Heating program - changeover.
		3A:2	Function input DE1: External demand with set supply temperature. Supply temperature setting: Coding address 9B. Internal circulation pump function: Coding address 3F.
		3A:3	Function input DE1: External blocking. Internal circulation pump function: Coding address 3E.
		3A:4	Function input DE1: External blocking with fault message input Internal circulation pump function: Coding address 3E.
		3A:5	Function input DE1: Fault message input.
		3A:6	Function input DE1: Brief operation, DHW recirculation pump (pushbutton function DHW recirculation pump runtime adjustment: Coding address 3D.

"General" Group

Coding

Coding in the factory setting		Possible change	
3B:0	Function input DE2 at extension EA1: Not assigned	3B:1	Function input DE2: Heating program - changeover.
		3B:2	Function input DE2: External demand with set supply temperature. Supply temperature setting: Coding address 9B. Internal circulation pump function: Coding address 3F.
		3B:3	Function input DE2: External blocking. Internal circulation pump function: Coding address 3E.
		3B:4	Function input DE2: External blocking with fault message input Internal circulation pump function: Coding address 3E.
		3B:5	Function input DE2: Fault message input.
		3B:6	Function input DE2: Brief operation, DHW recirculation pump (pushbutton function). DHW recirculation pump runtime adjustment: Coding address 3D.
3C:0	Function input DE3 at extension EA1: Not assigned	3C:1	Function input DE3: Heating program - changeover.
		3C:2	Function input DE3: External demand with set supply temperature. Supply temperature setting: Coding address 9B. Internal circulation pump function: Coding address 3F.
		3C:3	Function input DE3: External blocking. Internal circulation pump function: Coding address 3E.
		3C:4	Function input DE3: External blocking with fault message input Internal circulation pump function: Coding address 3E.
		3C:5	Function input DE3: Fault message input.
		3C:6	Function input DE3: Brief operation, DHW recirculation pump (pushbutton function). DHW recirculation pump runtime adjustment: Coding address 3D.
3D:5	DHW recirculation pump runtime for brief operation: 5 minutes	3D:1 to 3D:60	DHW recirculation pump off delay adjustable from 1 to 60 minutes.
4B:0	Function input [96]: Room thermostat (Vitotrol 100) for constant temperature control	4B:1	External demand.
		4B:2	External blocking.

"General" Group

Coding

Coding in the factory setting		Possible change	
53:1	Function connection [28] of the internal extension: DHW recirculation pump	53:0	Function connection [28]: Central fault message.
		53:2	Function connection [28]: External heating circuit pump (heating circuit 1).
		53:3	Function connection [28]: External circulation pump for DHW tank heating.
76:2	With cascade communication module (recognized automatically; only for constant temperature control units).	76:1	With LON communication module (recognized automatically).
		76:0	Without communication module
80:6	A fault message is displayed if a fault is active for at least 30 seconds	80:0	Immediate fault message.
		80:2 to 80:199	Minimum fault duration until fault message occurs, adjustable from 10 sec. to 995 sec; 1 step ≙ 5 sec.
81:1	Automatic summer/wintertime changeover	81:0	Manual summer/wintertime changeover.
		81:2	Use of the radio clock receiver (automatic recognition).
		81:3	With LON communication module: The control unit receives the time.
88:0	Temperature display in °C (Celsius)	88:1	Temperature display in °F (Fahrenheit).
8A:175	Do not adjust.	--	--
8F:0	Operation in the standard menu and extended menu enabled **Note:** The respective code is only activated when you exit the service menu	8F:1	Operation in the standard menu and extended menu blocked. Emissions test mode can be enabled
		8F:2	Operation enabled in the standard menu; blocked in the extended menu. Emissions test mode can be enabled
94:0	Without Open Therm extension	94:1	With Open Therm extension (automatic recognition).
95:0	Without Vitocom 100 communication interface	95:1	With Vitocom 100 communication interface (automatic recognition).
99:0	Do not adjust	--	--
9A:0	Do not adjust	--	--
9B:70	Set supply temperature for external demand 158°F (70°C)	9B:0 to 9B:127	Set supply temperature for external demand adjustable from 32 to 260°F (0 to 127°C) (limited by boiler-specific parameters).

"Boiler" Group

Coding

Coding in the factory setting		**Possible change**	
01:2	Do not adjust!	--	--
04:1	Minimum burner pause subject to the boiler load (specified by boiler coding card)	04:0	Minimum burner pause set permanently (specified by boiler coding card).
06:...	Maximum limit of the boiler water temperature, specified in °C by the boiler coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges specified by the boiler.
07:1	Boiler number in multi boiler systems	07:2 to 07:8	Boiler number 2 to 8 in multi-boiler systems.
08:...	Maximum burner heating output in kW in the case of a multi boiler system	08:0 to 08:199	Maximum burner heating output adjustable from 0 to 199 kW (limited by boiler specific parameters) in steps of 1 kW.
0D:0	Do not adjust!	--	--
0E:0	Do not adjust!	--	--
13:1	Do not adjust!	--	--
14:1	Do not adjust!	--	--
15:1	Do not adjust!	--	--
21:0	No service interval (hours run) selected	21:1 to 21:100	Number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h One adjusting step ≙ 100 h.
23:0	No time interval for burner service	23:1 to 23:24	Interval adjustable from 1 to 24 months.
24:0	No "Service" display	24:1	"Service" display (the address is automatically set and must be manually reset after a service has been carried out).
28:0	No burner interval ignition	28:1 to 28:24	Interval adjustable from 1 hour to 24 hours. The burner is force started once every 30 seconds (only when operating with LPG).
2E:0	Do not adjust!	--	--
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled.
		2F:2	Fill program enabled.
30:3	When changing from a single boiler to a multi boiler operation, the coding address may automatically reset to 30:3. To prevent continuous boiler pump operation, adjust the coding address for each boiler to 30:0.	30:0	Coding address should be set to 30:0, if not adjust to 30:0
31:... NOT USED	Set speed in % of the internal circulation pump when operated as boiler circuit pump, specified by the boiler coding card	31:0 to 31:100	Set speed adjustable from 0 to 100%.
38:0	Status burner control unit: Operational (no fault)	38:≠0	Status burner control unit: Fault.

Calling up Coding Level 2 – Vitotronic 300-K

Note:

- In coding level 2, all codes are accessible, including the codes from coding level 1.
- Codes that have no function due to the heating system equipment level or the setting of other codes are not displayed.
- Heating systems with one heating circuit without mixing valve and one or two heating circuits with mixing valve: The heating circuit without mixing valve is designated "Heating circuit 1" and the heating circuits with mixing valve as "Heating circuit 2" or "Heating circuit 3". If the heating circuits were given individual designations, the selected designation and "HC1", "HC2" or "HC3" appear instead.

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. Press **OK** and ⮌ simultaneously for approx. 4 sec.
3. "Coding level 2"
4. Select group of required coding address:
   - "General"
   - "Cascade"
   - "DHW"
   - "Solar"
   - "Heating circuit 1/2/3"
   - "All codes std device"
     In this group, all coding addresses (except the coding addresses from the "Solar" group) are displayed in ascending order.
5. Select coding address.
6. Select value according to the following tables and confirm with "**OK**".
7. If you want to reset all codes to their factory set condition:
   Select "Standard setting" in "Coding level 2".

   Note: This also resets codes from coding level 1.

"General" Group

Coding

Coding in the factory set condition		Possible change	
00:1	System version 1: One heating circuit without mixing valve A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value address 00: ...	System version	Description
2	1	One heating circuit without mixing valve A1 (heating circuit 1), with DHW heating (code is adjusted automatically)
3	2	One heating circuit with mixing valve M2 (heating circuit 2), without DHW heating
4	2	One heating circuit with mixing valve (heating circuit 2), with DHW heating
5	3	One heating circuit without mixing valve A1 (heating circuit 1) and one heating circuit with mixing valve M2 (heating circuit 2), without DHW heating (code is adjusted automatically)
6	3	One heating circuit without mixing valve A1 (heating circuit 1) and one heating circuit with mixing valve M2 (heating circuit 2), with DHW heating (code is adjusted automatically)
7	3	One heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), without DHW heating
8	3	One heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), with DHW heating
9	3	One heating circuit without mixing valve A1 (heating circuit 1), one heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), without DHW heating (code is adjusted automatically)
10	3	One heating circuit without mixing valve A1 (heating circuit 1), one heating circuit with mixing valve M2 (heating circuit 2) and one heating circuit with mixing valve M3 (heating circuit 3), with DHW heating (code is adjusted automatically)

Coding in the factory set condition		Possible change	
12:5	With extension EA1: DHW recirculation pump runtime for brief operation: 5 min.	12:1 to 12:60	Runtime adjustable from 1 to 60 min.
1E:0	With extension EA1 (analogue input 0-10V): Temperature demand from 32 to 212°F (0 to 100°C): 1V ≙ 50°F (10°C) 10V ≙ 212°F (100°C)	1E:1	Temperature demand from 86 to 248°F (30 to 120°C): 1V ≙ 86°F (30°C) 10V ≙ 248°F (120°C)
4A:0	Never adjust.	-	-
4B:0	Sensor [17][B] not installed.	4B:1	Sensor [17][B] installed (e.g. temperature sensor T2); will be recognized automatically.
4C:0	Connection at plug [20]A1: heating circuit pump.	4C:1	Primary pump, primary store system.
4F:5	Distribution pump run-on time 5 min.	4F:0	No pump run-on.
		4F:1 to 4F:60	Run-on time adjustable from 1 to 60 min.

"General" Group *(continued)*

Coding in the factory set condition		Possible change	
50:10	Start integral threshold for external heat source set to 10 K x min.	50:1 to 50:255	Start integral threshold for external heat source adjustable from 1 to 255 K x min.
51:255	Shutdown integral threshold for external heat source set to 255 K x min.	51:1 to 51:255	Shutdown integral threshold for external heat source adjustable from 1 to 255 K x min.
54:0	Without solar thermal system	54:1	With Vitosolic 100 (automatic recognition)
		54:2	With Vitosolic 200 (automatic recognition)
		54:3	With solar control module SM1 without auxiliary function (automatic recognition)
		54:4	With solar control module SM1 with auxiliary function, e.g. central heating backup (automatic recognition)
5B:0	Without extension EA1.	5B:1	With extension EA1; automatic recognition.
5C:0	Function output [157] at extension EA1: central fault message.	5C:1	Accessories pump.
		5C:2	No function.
		5C:3	Heating circuit pump A1 is switched to low speed (reduced mode).
		5C:4	Heating circuit pump M2 is switched to low speed (reduced mode).
		5C:5	Heating circuit pump M3 is switched to low speed (reduced mode).
5D:0	Function input DE1 at extension EA1: No function.	5D:1	Heating program changeover.
		5D:2	External demand with minimum set supply temperature. Setting of the set value in coding address "9B".
		5D:3	External blocking.
		5D:4	External blocking with fault message.
		5D:5	Fault message input.
		5D:6	Brief operation, DHW recirculation pump (pushbutton function). Setting of runtime for DHW recirculation pump in coding address "12" in the "General" group.
5E:0	Function input DE2 at extension EA1: No function.	5E:1	Heating program changeover.
		5E:2	External demand with minimum set supply temperature. Setting of the set value in coding address "9B".
		5E:3	External blocking.
		5E:4	External blocking with fault message.
		5E:5	Fault message input.
		5E:6	Brief operation, DHW recirculation pump (pushbutton function). Setting of runtime for DHW recirculation pump in coding address "12" in the "General" group.
5F:0	Function input DE3 at extension EA1: No function.	5F:1	Heating program changeover.
		5F:2	External demand with minimum set supply temperature. Setting of the set value in coding address "9B".
		5F:3	External blocking.
		5F:4	External blocking with fault message.
		5F:5	Fault message input.
		5F:6	Brief operation, DHW recirculation pump (pushbutton function). Setting of runtime for DHW recirculation pump in coding address "12" in the "General" group.

"General" Group *(continued)*

Coding in the factory set condition		Possible change	
76:0	Without communication module	76:1	With LON communication module (automatic recognition)
77:5	LON participant number	77:2 to 77:99	LON participant number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 98 = Vitotronic 200-H 99 = Vitocom **Note:** Allocate each number only once.
78:1	LON communication enabled.	78:0	LON communication disabled.
79:1	With LON communication module: Control unit is fault manager.	79:0	Control unit is not fault manager
7A:0	Without central control of heating circuits Not Used	7A:1	With central control (see page 83) Heating circuit A1
		7A:2	Heating circuit M2
		7A:3	Heating circuit M3
7B:1	With LON communication module: Control unit transmits the time.	7B:0	Does not transmit time
7E:0	Without flue gas cascade or with flue gas cascade with negative pressure (only for multi boiler systems)	7E:1	With positive pressure flue gas cascade
7F:1	Detached house	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating possible
80:6	A fault message is displayed if a fault is active for at least 30 sec	80:0	Immediate fault message
		80:2 to 80:199	The minimum fault duration before a fault message is issued is adjustable from 10 to 995 sec; 1 step ≙ 5 sec
81:1	Automatic summer/wintertime changeover	81:0	Manual summer/wintertime changeover
		81:2	Use of the radio clock receiver (automatic recognition)
		81:3	With LON communication module: The control unit receives the time

"General" Group *(continued)*

Coding in the factory set condition		Possible change	
82:3	Summer time starts: March	82:1 to 82:12	January to December
83:5	Summer time starts: Week 5 of the selected month	83:1 to 83:5	Week 1 to week 5 of the selected month
84:7	Summer time starts: Last Sunday of the selected month	84:1 to 84:7	Monday to Sunday
85:10	Wintertime starts: October	85:1 tp 85:12	January to December
86:5	Wintertime starts: Week 5 of the selected month	86:1 to 86:5	Week 1 to week 5 of the selected month
87:7	Wintertime starts: Last Sunday of the selected month	87:1 to 87:7	Monday to Sunday
88:0	Temperature unit °C (Celsius)	88:1	Temperature unit °F (Fahrenheit)
89:...	Never adjust!	-	-
8A:175	Never adjust!	-	-
8F:0	All control elements active	8F:1	All control elements locked out
		8F:2	Only standard settings can be controlled
90:128	Time constant for calculating the adjusted outside temperature 21.3 h	90:1 to 90:199	Fast (low values) or slow (high values) matching of the supply temperature, subject to the set value when the outside temperature changes; 1 step ≙ 10 min
91:0	Connection at terminals 1 and 2 in plug 143 disabled (external heating program changeover) (see page 22)	91:1	Contact affects the following heating circuits: Heating circuit A1
		91:2	Heating circuit M2
		91:3	Heating circuits A1 and M2
		91:4	Heating circuit M3
		91:5	Heating circuits A1 and M3
		91:6	Heating circuits with mixing valve M2 and M3
		91:7	Heating circuits A1, M2 and M3
92:186	Never adjust! Will only be displayed if "8A:176" is programmed.	-	-
96:0	Without extension PCB for heating circuits 2 and 3	96:1	With extension PCB for heating circuits 2 and 3 (automatic recognition)
97:2	With LON communication module: The control unit sends the outside temperature to the Vitotronic 200-H	97:0	The outside temperature of the sensor connected to the control unit is only utilized internally
		97:1	The control unit receives the outside temperature from the Vitotronic 200-H
98:1	Viessmann system number (in conjunction with monitoring several systems within one LON system with Vitocom 300)	98:1 to 98:5	System number adjustable from 1 to 5

"General" Group *(continued)*

Coding in the factory set condition		Possible change	
99:0	Connection at terminals 2 and 3 in plug [143] disabled (external blocking/ external "Mixing valve close") (see page 22)	99:1	No function
		99:2	External "Mixing valve close" Heating circuit M2
		99:3	No function
		99:4	External "Mixing valve close" Heating circuit M3
		99:5	No function
		99:6	External "Mixing valve close" Heating circuits with mixing valve M2 and M3
		99:7	No function
		99:8	External blocking
		99:9	No function
		99:10	External blocking/external "Mixing valve closed" Heating circuit M2
		99:11	No function
		99:12	External blocking/external "Mixing valve closed" Heating circuit M3
		99:13	No function
		99:14	External blocking/external "Mixing valve closed" Heating circuits with mixing valve M2 and M3
		99:15	No function
9A:0	Connection at terminals 1 and 2 in plug [143] disabled (external "Mixing valve open") (see page 22)	9A:1	No function
		9A:2	External "Mixing valve open" Heating circuit M2
		9A:3	No function
		9A:4	External "Mixing valve open" Heating circuit M3
		9A:5	No function
		9A:6	External "Mixing valve open" Heating circuits with mixing valve M2 and M3
		9A:7	No function
9B:70	Set minimum supply temperature for external demand (input [146]) 158°F (70°C)	9B:0	No default set value
		9B:1 to 9B:127	Set value adjustable from 34 to 260°F (1 to 127°C)
9C:20	Monitoring LON participants: If a participant fails to respond, the values defaulted internally by the control unit will be used for a further 20 min. Only then will a fault message be issued	9C:0	No monitoring
		9C:5 to 9C:60	Time adjustable from 5 to 60 min.
9F:8	Differential temperature 8 K, only in conjunction with heating circuit M2/ M3	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K

"Cascade" Group

Coding

Coding in the factory set condition		Possible change	
35:4	4 boilers connected to the Vitotronic 300-K	35:1 to 35:8	1 to 8 boilers connected to the Vitotronic 300-K
36:0	Electronic minimum system supply temperature limit set to 32°F (0°C)	36:1 to 36:127	Electronic minimum system supply temperature limit adjustable from 32 to 260°F (0 to 127°C)
37:80	Electronic maximum system supply temperature limit set to 176°F (80°C)	37:20 to 37:127	Electronic maximum system supply temperature limit adjustable from 68 to 260°F (20 to 127°C)
38:0	No changeover between lead boilers and boiler sequence See chapter "Cascade control".	38:1	Lead boiler changeover: Every first day of the month, the boiler with the burner that has operated for the shortest number of hours becomes lead boiler
		38:2 to 8:200	Lead boiler changeover after 200 to 20,000 hours run 1 step ≙ 100 hours run
39:0	No permanent lead boiler	39:1 to 39:8	Permanent lead boiler is boiler ...
3A:0	No permanent last boiler	3A:1 to 3A:8	Permanent last boiler is boiler ...
3B:1	Stand-alone parallel boiler connection with supply temperature sensor	3B:0	Stand-alone parallel boiler connection without supply temperature sensor
3C:0	Condensing strategy (see page 81)	3C:1	Conventional boiler strategy 1 (see page 81)
		3C:2	Conventional boiler strategy 2 (see page 81)
3D:1	Output statement for condensing strategy and conventional boiler strategy 1	3D:0	No output statement **Note:** Vitotronic 300-K regulates only according to conventional boiler strategy 2.
3E:0	Distribution pump will only run if heat demand exists.	3E:1	Distribution pump always runs, shutdown only via signal "External blocking".
3F:0	Without DHW tank priority control for distribution pump	3F:1	With DHW tank priority control for distribution pump
41:31	No ECO threshold boiler 1	41:−30 to 41:+30	ECO threshold boiler 1 adjustable from -22 to +86°F (−30 to +30°C)

"Cascade" Group *(continued)*

Coding in the factory set condition		Possible change	
42:31	No ECO threshold boiler 2	42: – 30 to 42: + 30	ECO threshold boiler 2 adjustable from -22 to + 86°F (– 30 to + 30°C)
43:31	No ECO threshold boiler 3	43: – 30 to 43: + 30	ECO threshold boiler 3 adjustable from -22 to + 86°F (– 30 to + 30°C) No ECO threshold boiler
44:31	No ECO threshold boiler 4	44: – 30 to 44: + 30	ECO threshold boiler 4 adjustable from -22 to + 86°F (– 30 to + 30°C)
45:60	Start integral threshold set to 60 K x min	45:1 to 45:255	Start integral threshold adjustable from 1 to 255 K x min **Note:** If the threshold is exceeded, one boiler or one burner stage is switched on.
46:10	Shutdown integral threshold set to 10 K x min	46:1 to 46:255	Shutdown integral threshold adjustable from 1 to 255 K x min **Note:** If the threshold is exceeded, one boiler or one burner stage is switched on.
47:15	Shutdown differential temperature set to 15 K	47:2 to 47:30	Shutdown differential adjustable from 2 to 30 K **Note:** One boiler or one burner stage will be switched off if the actual supply temperature exceeds the set supply temperature by this value.
48:35	Never adjust!	-	-
49:40	Never adjust!	-	-
65:31	No ECO threshold boiler 5	65: – 30 to 65: + 30	ECO threshold boiler 5 adjustable from -22 to + 86°F (– 30 to + 30°C)
6F:31	No ECO threshold boiler 6	6F: – 30 to 6F: + 30	ECO threshold boiler 6 adjustable from -22 to + 86°F (– 30 to + 30°C)
74:31	No ECO threshold boiler 7	74: – 30 to 74: + 30	ECO threshold boiler 7 adjustable from -22 to + 86°F (– 30 to + 30°C)
7D:31	No ECO threshold boiler 8	7D: – 30 to 7D: + 30	ECO threshold boiler 8 adjustable from -22 to + 86°F (– 30 to + 30°C)

"DHW" Group

Coding

Coding in the factory set condition		Possible change	
55:0	DHW tank heating, hysteresis ± 2.5 K	55:1	Adaptive DHW tank heating enabled (see page 86)
		55:2	DHW tank temperature control with 2 DHW tank temperature sensors (see page 86)
		55:3	DHW tank temperature controller primary store system (see page 86)
56:0	Set DHW temperature adjustable from 50 to 140° F (10 to 60° C)	56:1	Set DHW temperature adjustable from 50 to above 140°F (10 to above 60°C) **Note:** Subject to boiler coding card of connected boilers. Observe the max. permissible DHW temperature.
58:0	Without auxiliary function for DHW heating	58:10 to 58:95	Input of a second set DHW temperature, adjustable from 50 to 203°F (10 to 95°C) (observe coding address "56")
59:0	DHW tank heating: Starting point -2.5 K Stopping point +2.5 K	59:1 to 59:10	Starting point adjustable from 1 to 10 K below the set value
5A:0	For DHW heating: The set supply temperature is determined by the highest system supply temperature demand.	5A:1	For DHW heating: The set supply temperature is determined by the DHW tank supply temperature demand.
60:20	During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature	60:10 to 60:50	The differential between the boiler water temperature and the set DHW temperature is adjustable from 10 to 50 K
62:10	Circulation pump with 10 min. run-on time after DHW tank heating	62:0	Circulation pump without run-on
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min.
64:2	During party mode and after external changeover during operation with constant standard room temperature: Constant DHW heating enabled and DHW recirculation pump ON	64:0	No DHW heating, DHW recirculation pump "OFF"
		64:1	DHW heating and DHW recirculation pump according to time program
66:4	Input of the set DHW temperature: At the control unit programming unit and all installed Vitotrol 300 remote control units	66:0	At the programming unit
		66:1	At the programming unit and remote control, heating circuit A1
		66:2	At the programming unit and remote control, heating circuit with mixing valve M2
		66:3	At the programming unit and remote control, heating circuit M3
		66:5	At the remote control, heating circuit A1
		66:6	At the remote control, heating circuit with mixing valve M2
		66:7	At the remote control, heating circuit M3

"DHW" Group *(continued)*

Coding in the factory set condition		Possible change	
67:40	With the Vitosolic: Third set DHW temperature 104°F (40°C). Reheating will be suppressed above the selected temperature. The DHW tank is heated exclusively by the solar thermal system.	67:0	Without third set DHW temperature
		67:1 to 67:95	Input of the third set DHW temperature; adjustable from 34 to 203°F (1 to 95°C) (subject to boiler coding card of the connected boilers)
68:8	With 2 DHW tank temperature sensors (code "55:2"): DHW tank heating stop point at set value x 0.8	68:2 to 68:10	Factor adjustable from 0.2 to 1; 1 step ≙ 0.1
69:7	With 2 DHW tank temperature sensors (code "55:2"): DHW tank heating start point at set value x 0.7	69:1 to 69:9	Factor adjustable from 0.1 to 0.9; 1 step ≙ 0.1
6A:75	Runtime, servomotor, mixing valve, heat exchanger set, Vitotrans 222, 80 and 120 kW: 75 sec.	6A:10 to 6A:255	For heat exchanger set Vitotrans 222, 240 kW: set 113 sec. Runtime adjustable from 10 to 255 sec.
70:0	DHW recirculation pump "ON" according to time program when DHW heating is enabled	70:1	DHW recirculation pump "ON" according to time program
71:0	DHW recirculation pump: "ON" according to time program	71:1	"OFF" during DHW heating to the first set value
		71:2	"ON" during DHW heating to the first set value
72:0	DHW recirculation pump: "ON" according to time program	72:1	"OFF" during DHW heating to the second set value
		72:2	"ON" during DHW heating to the second set value
73:0	DHW recirculation pump: "ON" according to time program	73:1 to 73:6	During time program 1x/h for 5 min. "ON" to 6x/h for 5 min. "ON"
		73:7	Constantly "ON"
75:0	DHW recirculation pump "ON" during economy mode according to time program	75:1	DHW recirculation pump "OFF" during economy mode according to time program

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"Solar" Group

Only in conjunction with solar control module, type SM1.

Coding

Coding in the factory set condition		Possible change	
00:8	The solar circuit pump starts when the collector temperature exceeds the actual DHW temperature by 8 K.	00:2 to 00:30	The differential between the actual DHW temperature and the start point for the solar circuit pump can be adjusted from 2 to 30 K.
01:4	The solar circuit pump stops when the differential between the collector temperature and the actual DHW temperature is less than 4 K.	01:1 to 01:29	The differential between the actual DHW temperature and the stop point for the solar circuit pump can be adjusted from 1 to 29 K.
02:0	Solar circuit pump (multi stage) without speed control by solar control module SM1.	02:1	Solar circuit pump (multi stage) is speed-controlled with wave pack control.
		02:2	Solar circuit pump is speed-controlled with PWM control.
03:10	The temperature differential between the collector temperature and actual DHW temperature is regulated to 10 K.	03:5 to 03:20	The differential temperature control between collector temperature and actual DHW temperature can be adjusted from 5 to 20 K.
04:4	Controller amplification of the speed control 4%/K.	04:1 to 04:10	Controller amplification adjustable from 1 to 10%/K.
05:10	Minimum speed of the solar circuit pump 10% of the maximum speed.	05:2 to 05:100	Minimum speed of the solar circuit pump is adjustable from 2 to 100%.
06:75	Maximum speed of the solar circuit pump 75% of the maximum possible speed.	06:1 to 06:100	Maximum speed of the solar circuit pump is adjustable from 1 to 100%.
07:0	Interval function of the solar circuit pump switched off.	07:1	Interval function of the solar circuit pump switched on. To capture the collector temperature more accurately, the solar circuit pump starts for short cycles.
08:60	The solar circuit pump stops when the actual DHW temperature reaches the maximum DHW tank temperature 140°F (60°C).	08:10 to 08:90	The maximum DHW tank temperature can be adjusted from 50 to 194°F (10 to 90°C).
09:130	The solar circuit pump stops if the collector temperature reaches 266 50 to 194°F (130°C) (maximum collector temperature to protect the system components).	09:20 to 09:200	The temperature can be adjusted from 68 to 392°F (20 to 200°C).
0A:5	To protect the system components and heat transfer medium: The speed of the solar circuit pump is reduced if the actual DHW tank temperature is 5 K below the maximum DHW tank temperature.	0A:0	Stagnation time reduction disabled.
		0A:1 to 0A:40	Value for stagnation time reduction adjustable from 1 to 40 K.
0B:0	Frost protection function for solar circuit switched off.	0B:1	Frost protection function for solar circuit switched on (not required with Viessmann heat transfer medium).
0C:1	Δt monitoring switched on. No flow rate captured in the solar circuit, or flow rate too low.	0C:0	Δt monitoring switched off.
0D:1	Night circulation monitoring switched on. Unintentional flow rate is captured in the solar circuit (e.g. at night).	0D:0	Night circulation monitoring switched off.

"Solar" Group *(continued)*

Coding in the factory set condition		Possible change	
0E:1	Calculation of solar yield with Viessmann heat transfer medium.	0E:2	Calculation of solar yield with water as heat transfer medium (do not select, as operation is only possible with Viessmann heat transfer medium).
		0E:0	Calculation of solar yield switched off.
0F:70	Flow rate of solar circuit at max. pump speed 1.8 GPM (7 L/min).	0F:1 to 0F:255	Flow rate adjustable from 0.02 to 6.7 GPM (0.1 to 25.5 L/min). 1 step ≙ 0.02 GPM (0.1 L/min).
10:0	Target temperature control switched off (see coding address "11").	10:1	Target temperature control switched on.
11:50	Set solar DHW temperature 122°F (50°C). - Target temperature control switched on (code "10:1"): Temperature at which the solar heated water in the DHW tank is to be stratified. - Extended control functions set to heat two DHW tanks (code "20:8"): The second DHW tank is heated when one DHW tank reaches its set DHW temperature.	11:10 to 11:90	The set DHW temperature for solar can be adjusted from 50 to 194°F (10 to 90°C).
12:10	Minimum collector temperature 50°F (10°C). The solar circuit pump is not started until the selected minimum collector temperature is exceeded.	12:0	Minimum collector temperature function switched off.
		12:1 to 12:90	The minimum collector temperature is adjustable from 34 to 194°F (1 to 90°C).
20:0	No extended control function enabled.	20:1	Additional function for DHW heating.
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and auxiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function.
		20:6	Thermostat function and auxiliary function.
		20:7	Solar heating via external heat exchanger without additional temperature sensor.
		20:8	Solar heating via external heat exchanger with additional temperature sensor.
		20:9	Solar heating of two DHW tanks.
22:8	Start temperature differential for central heating backup: 8 K. Switching output [22] is switched on when the temperature at sensor [7] exceeds the temperature at sensor [10] by the selected value.	22:2 to 22:30	Start temperature differential for central heating backup is adjustable from 2 to 30 K.
23:4	Stop temperature differential for central heating backup: 4 K. Switching output [22] is switched off when the temperature at sensor [7] falls below the stop point. The stop point is the sum of the temperature at sensor [10] and the value selected for the stop temperature differential.	23:2 to 23:30	Stop temperature differential for central heating backup is adjustable from 1 to 29 K.

"Solar" Group *(continued)*

Coding in the factory set condition		Possible change	
24:40	Start temperature for thermostat function 104°F (40°C). Start temperature for thermostat function ≤ stop temperature for thermostat function: Thermostat function, e.g. for reheating. Switching output [22] is switched on when the temperature at sensor [7] falls below the start temperature for the thermostat function. Start temperature for thermostat function > stop temperature for thermostat function: Thermostat function, e.g. for utilizing excess heat. Switching output [22] is switched on when the temperature at sensor [7] exceeds the start temperature for the thermostat function.	24:0 to 24:100	Start temperature for thermostat function is adjustable from 0 to 100 K.
25:50	Stop temperature for thermostat function 122°F (50°C). Start temperature for thermostat function ≤ stop temperature for thermostat function: Thermostat function e.g. for reheating. Switching output [22] is switched off when the temperature at sensor [7] exceeds the start temperature for the thermostat function. Start temperature for thermostat function > stop temperature for thermostat function: Thermostat function e.g. for utilizing excess heat. Switching output [22] is switched off when the temperature at sensor [7] falls below the start temperature for the thermostat function.	25:0 to 25:100	Start temperature for thermostat function is adjustable from 0 to 100 K.
26:1	Priority for DHW tank 1 – with alternate heating. Only when setting code "20:8".	26:0	Priority for DHW tank 1 – without alternate heating.
		26:2	Priority for DHW tank 2 – without alternate heating.
		26:3	Priority for DHW tank 2 – with alternate heating.
		26:4	Alternate heating without priority for one DHW tank.
27:15	Alternate heating time 15 min. The DHW tank without priority is heated at most for the duration of the set alternate heating time if the DHW tank with priority is heated up.	27:5 to 27:60	The alternate heating time is adjustable from 5 to 60 min.
28:3	Alternate pause time 3 min. After the selected alternate heating time for the DHW tank without priority has expired, the rise in collector temperature is captured during the alternate pause time.	28:1 to 28:60	The alternate pause duration is adjustable from 1 to 60 min.

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group

Coding

Coding in the factory set condition		**Possible change**	
A0:0	Without remote control	A0:1	With Vitotrol 200A (automatic recognition)
		A0:2	With Vitotrol 300A or Vitohome 300 (automatic recognition)
A1:0	All possible settings at the remote control can be accessed	A1:1	Only party mode can be set at the remote control (only for Vitotrol 200A)
A2:2	DHW tank priority applicable to heating circuit pump and mixing valve	A2:0	Without DHW tank priority applicable to heating circuit pump and mixing valve
		A2:1	DHW tank priority only applicable to mixing valve
		A2:3 to A2:15	No function.
A3:2	Outside temperature below 34°F (1°C): Heating circuit pump "ON" Outside temperature above 37°F (3°C): Heating circuit pump "OFF"	A3:-9 to A3:15	Heating circuit pump "ON/ OFF" (see the following table)

Note: If a value below 34°F (1°C) is selected, there is a risk that pipes outside the thermal insulation of the building could freeze up.
The standby mode in particular should be taken into consideration, e.g. during holidays.

Parameter address A3:...	**Heating circuit pump**	
	Heating circuit pump "ON"	**Heating circuit pump "OFF"**
-9	14°F (–10°C)	18°F (–8°C)
-8	16°F (–9°C)	19.5°F (–7°C)
-7	18°F (–8°C)	21°F (–6°C)
-6	19.5°F (–7°C)	23°F (–5°C)
-5	21°F (–6°C)	25°F (–4°C)
-4	23°F (–5°C)	27°F (–3°C)
-3	25°F (–4°C)	28.5°F (–2°C)
-2	27°F (–3°C)	30°F (–1°C)
-1	28.5°F (–2°C)	32°F (0°C)
0	30°F (–1°C)	34°F (+1°C)
1	32°F (0°C)	36°F (+2°C)
2 to 15	34°F (+1°C) to 57°F (+14°C)	27°F (+3°C) to 61°F (+16°C)

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
A4:0	With frost protection	A4:1	No frost protection; this setting is only possible if code "A3:-9" has been selected. **Note:** See "Please note" for code "A3"
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" when the outside temperature (AT) is 1 K higher than the set room temperature (RT_{set}) $AT > RT_{set} + 1$ K	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF"; see the following table

	With heating circuit pump logic function:
Parameter address A5:...	**Heating circuit pump "OFF"**
1	$AT > RT_{set} + 5$ K
2	$AT > RT_{set} + 4$ K
3	$AT > RT_{set} + 3$ K
4	$AT > RT_{set} + 2$ K
5	$AT > RT_{set} + 1$ K
6	$AT > RT_{set}$
7 to 15	$RT_{actual} > RT_{set} - 1$ K $RT_{actual} > RT_{set} - 9$ K

Coding in the factory set condition		Possible change	
A6:36	Extended economy mode disabled	A6:5 to A6:35	Extended economy control enabled, i.e. the burner and heating circuit pump will be stopped and the mixing valve closed at a variable value, adjustable between 41 and 95°F (5 and 35°C) plus 2°F (1°C). The base value is the adjusted outside temperature. This value is based on the actual outside temperature and a time constant that takes the cooling down of an average building into consideration.
A7:0	Without mixing valve economy function (only for heating circuits with mixing valve)	A7:1	With mixing valve economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": - If the mixing valve has been attempting to close for longer than 20 min. Heating circuit pump "ON": - If the mixing valve changes to control function - If there is a risk of frost
A9:7	With pump idle time: Heating circuit pump "OFF" in case of set value modification by changing the operating mode or changing the set room temperature	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time; adjustable from 1 to 15
AA:2	With output reduction through temperature sensor 17 A.	AA:0	Without output reduction.
		AA:1	No function.

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
B0:0	With remote control: Heating mode/reduced mode: weather-compensated (change the code only for the heating circuit with mixing valve)	B0:1	Heating mode: weather compensated Reduced mode: with room temperature hook-up
		B0:2	Heating mode: with room temperature hook-up Reduced mode: weather compensated
		B0:3	Heating mode/reduced mode: with room temperature hook-up
B1:	Never adjust!	-	-
B2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: Room influence factor 8 (change code only for heating circuit with mixing valve)	B2:0	Without room influence
		B2:1 to B2:64	Room influence factor adjustable from 1 to 64
B3:	Never adjust!	-	-
B5:0	With remote control: no room temperature dependent heating circuit pump logic function (change code only for heating circuit with mixing valve)	B5:1 to B5:8	Heating circuit pump logic function, see the following table:

Parameter address B5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	**Heating circuit pump "ON"**
1	$RT > RT_{set} + 5\ K$	$RT_{actual} < RT_{set} + 4\ K$
2	$RT > RT_{set} + 4\ K$	$RT_{actual} < RT_{set} + 3\ K$
3	$RT > RT_{set} + 3\ K$	$RT_{actual} < RT_{set} + 2\ K$
4	$RT > RT_{set} + 2\ K$	$RT_{actual} < RT_{set} + 1\ K$
5	$RT > RT_{set} + 1\ K$	$RT_{actual} < RT_{set}$
6	$RT > RT_{set}$	$RT_{actual} < RT_{set} - 1\ K$
7	$RT_{actual} > RT_{set} - 1\ K$	$RT_{actual} < RT_{set} - 2\ K$
8	$RT_{actual} > RT_{set} - 2\ K$	$RT_{actual} < RT_{set} - 3\ K$

Coding in the factory set condition		Possible change	
B6:0	With remote control: Without quick heat-up/ quick setback	B6:1	With quick heat-up/quick setback
B7:0	With remote control unit and for the heating circuit, operation with room temperature hook-up must be programmed: Without start optimization	B7:1	With start optimization (max. offset 2 h 30 min.)
		B7:2	With start optimization (max. offset 15 h 50 min.)
B8:10	With remote control unit and for the heating circuit, operation with room temperature hook-up must be programmed: Heat-up gradient start optimization 10 min/K	B8:11 to B8:255	Heat-up gradient adjustable from 11 to 255 min/K
B9:0	With remote control unit and for the heating circuit, operation with room temperature hook-up must be programmed: Without learning start optimization	B9:1	With learning start optimization

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"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
C0:0	With remote control: Without shutdown time optimization	C0:1	With shutdown time optimization (max. offset 1 h)
		C0:2	With shutdown time optimization (max. offset 2 h)
C1:0	With remote control: Without shutdown time optimization	C1:1 to C1:12	With shutdown time optimization (max. offset 10 to 120 min.) 1 step ≙ 10 min.
C2:0	With remote control: Without learning shutdown time optimization	C2:1	With learning shutdown time optimization
C3:125	Mixing valve runtime 125 sec. C3:10	C3:10 to C3:255	Runtime adjustable from 10 to 255 sec.
C4:1	System dynamics Mixing valve control characteristics	C4:0 to C4:3	Controller responds too quickly (cycles between "Open" and "Closed"): Select a lower value Controller responds too slowly (temperature is not held sufficiently): Select a higher value
C5:20	Electronic minimum supply temperature limit 68°F (20°C)	C5:1 to C5:127	Minimum limit adjustable from 34 to 261°F (1 to 127°C) (only for operation with standard room temperature)
C6:74	Electronic maximum supply temperature limit set to 165°F (74°C)	C6:10 to C6:127	Maximum limit adjustable from 50 to 261°F (10 to 127°C) (limited by boiler-specific parameters)
C8:31	With remote control unit and for the heating circuit, operation with room temperature hook-up must be programmed: Without room influence	C8:1 to C8:30	Room influence limit adjustable from 1 to 30 K
D5:0	With external heating program changeover (observe setting for coding addresses "5D", "5E" and "5F" in the "General" group): Heating program switches to "Constant central heating with reduced room temperature" or "Standby mode" (subject to the settings of the set reduced room temperature).	D5:1	The heating program changes to "Constant operation with standard room temperature".
D8:0	No heating program changeover via extension EA1	D8:1	Heating program changeover via input DE1 at extension EA1
		D8:2	Heating program changeover via input DE2 at extension EA1
		D8:3	Heating program changeover via input DE3 at extension EA1
E1:1	With remote control: Set day temperature adjustable at the remote control unit from 50 to 86°F (10 to 30°C).	E1:0	Set day temperature adjustable from 37 to 73°F (3 to 23°C).
		E1:2	Set day temperature adjustable from 63 to 99°F (17 to 37°C).
E2:50	With remote control: No display correction of the actual room temperature.	E2:0 to E2:49	Display correction –5 K to Display correction –0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K

"Heating Circuit 1, Heating Circuit 2, Heating Circuit 3" Group *(continued)*

Coding in the factory set condition		Possible change	
F1:0	Slab curing function disabled. **(Not used)**	F1:1 to F1:6	Slab curing function adjustable in accordance with 6 optional temperature/time profiles (Not used)
		F1:15	Constant supply temperature 68° F (20°C) (Not used)
F2:8	Time limit for party mode or external heating program changeover via pushbutton: 8 h*2. **Note:** Observe settings of coding addresses "5D", "5E", "5F" in the "General" group, as well as "D5" and "D8" in the "Heating circuit..." group.	F2:0	No time limit*2.
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h*2.
F8:-5	Temperature limit for terminating reduced mode 23°F (-5°C), see example on page 84. Observe the setting of coding address "A3".	F8:+10 to F8:-60	Temperature limit adjustable from +50 to -76°F (+10 to -60°C)
		F8:-61	Function disabled
F9:-14	Temperature limit for raising the reduced set room temperature 7°F (-14°C), see example on page 84.	F9:+10 to F9:-60	Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +50 to -76°F (+10 to -60°C)
FA:20	Raising the set boiler water temperature or the set supply temperature when changing from operation with reduced room temperature to operation with standard room temperature, by 20%. See example on page 84.	FA:0 to FA:50	Temperature rise adjustable from 0 to 50%
FB:60	Duration for raising the set boiler water temperature or the set supply temperature (see coding address "FA") 60 min. See example on page 84.	FB:0 to FB:300	Duration adjustable from 0 to 300 min.

*2 Party mode ends automatically in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.

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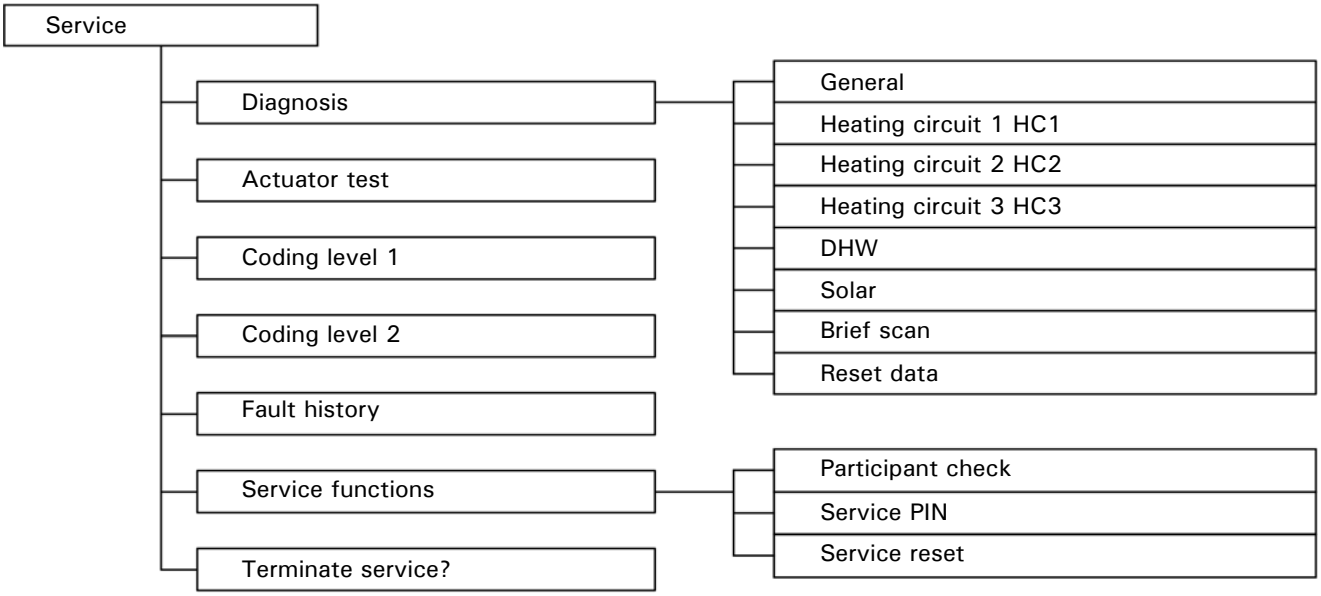
Calling up the Service Level

Service menu overview

Vitotronic 300-K

Press **OK** and ☰ simultaneously for approx. 4 sec.



Exiting the service level

1. Select “Terminate service?”.
2. Select “Yes”.
3. Confirm with **OK**.

Note: The service level is automatically exited after 30 minutes.

Vitotronic 200

1. Press **OK** and ☰ simultaneously for approx. 4 sec.

Exiting the service level

2. Select “Terminate service?”.
3. Select “Yes”.
4. Confirm with **OK**.

Note: The service level is automatically exited after 30 minutes.

Scanning Operating Data

- Vitotronic 300-K:
  Operating data can be scanned in various areas.
  See “Diagnosis” in the service menu overview.
  Operating data on heating circuits with mixing valves and solar can only be scanned if the components are installed in the system.
  For further information on operating data, see chapter “Brief scan”.
- Vitotronic 200: Operating data can be scanned in the service menu.

Refer to the relevant Vitodens Operating Instructions

For further information on operating data, see chapter “Brief scan”.

Note: “- - -” appears on the display if a sensor that has been scanned is faulty.

Calling up operating data

Vitotronic 300-K

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. “Diagnosis”
3. Select required group, e.g. “General”.

Vitotronic 200

Operating instructions, chapter “Scanning information”

Resetting operating data

Saved operating data (e.g. hours run) can be reset to 0. The value “Adjusted outside temp” is reset to the actual value.

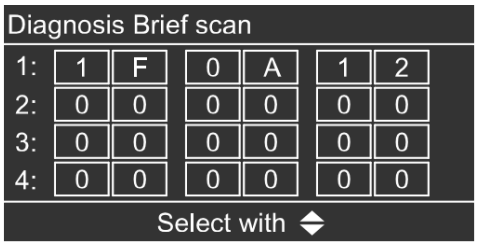
Vitotronic 300-K

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. “Diagnosis”
3. “Reset data”
4. Select required value (e.g. “Solar circuit pump”) or “All details”.

Vitotronic 200

Refer to the Operating Instructions (chapter “Scanning information”)

Brief Scan Vitotronic 200



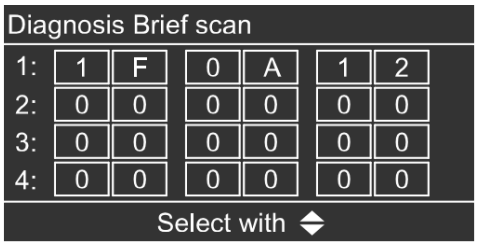
In the brief scan, you can scan temperatures, software versions and connected components, for example.

1. Press **OK** and ☰: until in service mode.
2. "Diagnosis"
3. "Brief scan".
4. Press **OK**.
   The display shows 4 lines with 6 fields each.

For an explanation of the relevant values in the individual lines and fields, see the following table:

Line (brief scan)	Field					
	1	**2**	**3**	**4**	**5**	**6**
1:	0	System type 0	Software version control unit		Software version programming unit	
2:	2	0	Appliance version		Device identification ZE-ID	
3:	0	0	Number of KM BUS participants		0	0
4:	Software version burner control unit		Type Burner control unit		Burner control unit version	
5:	Internal details for calibration			0	0	Software version extension EA1
6:	0	0	0	Flow rate sensor switching state 0: Normal operation 1: Flow rate too low or no flow	0	0
7:	LON Subnet address system number		LON Node address		0	0
8:	LON SBVT configuration	LON software version communication co-processor	LON Neuron chip software version		Number of LON participants	
9:	0	0	0	0	0	0
10:	0	0	0	0	0	0
11:	0	0	0	0	0	0

Brief Scan Vitotronic 300-K



In the brief scan, you can scan temperatures, software versions and connected components, for example.

1. Press **OK** and ☰: until in service mode.
2. "Diagnosis"
3. "Brief scan".
4. Press **OK**.
   The display shows 9 lines with 6 fields each.

For an explanation of the relevant values in the individual lines and fields, see the following table:

Line (brief scan)	Field					
	1	**2**	**3**	**4**	**5**	**6**
1:	System type 01-10		Software version control unit		Software version programming unit	
2:	2	0	0	0	Device identification ZE-ID	
3:	0	0	Number of KM BUS participants		Software version extension SM1	
4:	0	0	0	0	0	0
5:	0	0	0	0	Software version extension AM1	Software version extension EA1
6:	0	0	0	0	0	0
7:	LON subnet address system number		LON node address		0	0
8:	LON SBVT configuration	LON software version communication co-processor	LON neuron chip software version		Number of LON participants	
9:	Heating Circuit 1 with 1: Vitotrol 200A 2: Vitotrol 300A	Heating Circuit 1 Remote Software version	Heating Circuit 2 with 1: Vitotrol 200A 2: Vitotrol 300A	Heating Circuit 2 Remote Software version	Heating Circuit 3 with 1: Vitotrol 200A 2: Vitotrol 300A	Heating Circuit 3 Remote Software version
10:	0	0	0	0	0	0
11:	0	0	0	0	0	0

Fault Display Vitotronic 200

For the Vitotronic 200, refer to the boiler Service Instructions

If there is a fault, the red fault display on the control unit flashes. “Fault” is displayed and flashes.
The fault code is displayed with **OK**.

Note: If a central fault message facility is connected, this is started.
For an explanation of the fault code, see the chapter “Fault codes”.
For some faults, the type of fault is also displayed in plain text.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including resolved ones) are saved and can be called up.
Faults are sorted by date.

1. Press OK and ☰ simultaneously for approx. 4 sec.
2. “Fault history”
3. “Display?”
4. To exit press ⮌.

Fault Display Vitotronic 300-K

If there is a fault, the red fault display on the control unit flashes. “Fault” is displayed and flashes.
The fault code is displayed with **OK**.

Note: If a central fault message facility is connected, this is started.
For an explanation of the fault code, see the chapter “Fault codes”.
For some faults, the type of fault is also displayed in plain text.

Acknowledging a fault

Follow the instructions on the display.

Note: The fault message is transferred to the menu.
A fault messaging facility, if connected, will be switched off.
If an acknowledged fault is not remedied, the fault message will be re-displayed the following day and the fault message facility restarted.

Calling up acknowledged fault messages

Extended menu:

1. ☰
2. “Fault”

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up.
Faults are sorted by date.

1. Press **OK** and ☰ simultaneously for approx. 4 sec.
2. “Fault history”
3. “Display?”
4. To exit press ⮌.

Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
10	Activates at 32°F (0°C) outside temperature	Short circuit, outside temperature sensor	Check the outside temperature sensor (see page 90).
18	Activates at 32°F (0°C) outside temperature	Lead break, outside temperature sensor	Check outside temperature sensor (see page 90)
20	Vitotronic 300-K regulates alone without supply temperature sensor (supply temperature may not be high enough)	Short circuit, common supply temperature sensor	Check the common supply temperature sensor (see page 90)
28	Vitotronic 300-K regulates alone without supply temperature sensor (supply temperature may not be high enough)	Lead break, common supply temperature sensor	Check the common supply temperature sensor (see page 90)
40	Mixing valve is closed.	Short circuit, supply temperature sensor, heating circuit with mixing valve M2 (heating circuit 2)	Check the supply temperature sensor (see page 90).
44	Mixing valve is closed.	Short circuit, supply temperature sensor, heating circuit with mixing valve M3 (heating circuit 3)	Check the supply temperature sensor (see page 90).
48	Mixing valve is closed.	Lead break, supply temperature sensor, heating circuit with mixing valve M2 (heating circuit 2)	Check the supply temperature sensor (see page 90).
4C	Mixing valve is closed.	Lead break, supply temperature sensor, heating circuit with mixing valve M3 (heating circuit 3)	Check the supply temperature sensor (see page 90).
50	DHW tank primary pump “ON”: set DHW temperature = set supply temperature Priority control is cancelled. or With primary store system: DHW tank heating is started and stopped by DHW tank temperature sensor 2.	Short circuit, DHW tank temperature sensor 1	Check the DHW tank temperature sensor (see page 90).

Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
51	With primary store system: DHW tank heating is started and stopped by DHW tank temperature sensor 1.	Short circuit, DHW tank temperature sensor 2	Check the DHW tank temperature sensor (see page 90).
54	Control mode	Maintenance or error on Vitotronic 200 of boiler 5	Check maintenance display or fault code on the respective Vitotronic 200
55	Control mode	Maintenance or error on Vitotronic 200 of boiler 6	Check maintenance display or fault code on the respective Vitotronic 200
56	Control mode	Maintenance or error on Vitotronic 200 of boiler 7	Check maintenance display or fault code on the respective Vitotronic 200
57	Control mode	Maintenance or error on Vitotronic 200 of boiler 8	Check maintenance display or fault code on the respective Vitotronic 200
58	DHW tank primary pump “ON”: set DHW temperature = set supply temperature Priority control is cancelled. or With primary store system: DHW tank heating is started and stopped by DHW tank temperature sensor 2.	Lead break, DHW tank temperature sensor 1	Check the DHW tank temperature sensor (see page 90).
59	With primary store system: DHW tank heating is started and stopped by DHW tank temperature sensor 1.	Lead break, DHW tank temperature sensor 2	Check the DHW tank temperature sensor (see page 90).
5C	Control mode	Communication fault Vitotronic 200 of boiler 5	Check and replace cascade communication module and connecting cable if required
5D	Control mode	Communication fault Vitotronic 200 of boiler 6	Check and replace cascade communication module and connecting cable if required
5E	Control mode	Communication fault Vitotronic 200 of boiler 7	Check and replace cascade communication module and connecting cable if required
5F	Control mode	Communication fault Vitotronic 200 of boiler 8	Check and replace cascade communication module and connecting cable if required
60	Boiler with maximum temperature, return control “open”	Sensor 17 A incorrectly connected	Set code “4A:0”
68	Boiler with maximum temperature, return control “open”	Sensor 17 A incorrectly connected	Set code “4A:0”.

Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
70	With primary store system: Mixing valve primary circuit "Closed"; no DHW heating	Short circuit, temperature sensor 17 B	Check temperature sensor (see page 90) Without temperature sensor: Set code "4B:0"
78	With primary store system: Mixing valve primary circuit "Closed"; no DHW heating	Lead break, temperature sensor 17 B	Check temperature sensor (see page 90) Without temperature sensor: Set code "4B:0"
84	Control mode	Maintenance or error on Vitotronic 200 of boiler 1	Check maintenance display or fault code on the respective Vitotronic 200
85	Control mode	Maintenance or error on Vitotronic 200 of boiler 2	Check maintenance display or fault code on the respective Vitotronic 200
86	Control mode	Maintenance or error on Vitotronic 200 of boiler 3	Check maintenance display or fault code on the respective Vitotronic 200
87	Control mode	Maintenance or error on Vitotronic 200 of boiler 4	Check maintenance display or fault code on the respective Vitotronic 200
8C	Control mode	Communication fault Vitotronic 200 of boiler 1	Check and replace cascade communication module and connecting cable if required
8D	Control mode	Communication fault Vitotronic 200 of boiler 2	Check and replace cascade communication module and connecting cable if required
8E	Control mode	Communication fault Vitotronic 200 of boiler 3	Check and replace cascade communication module and connecting cable if required
8F	Control mode	Communication fault Vitotronic 200 of boiler 4	Check and replace cascade communication module and connecting cable if required
90	Control mode	Short circuit, temperature sensor 7, connection to solar control module.	Check temperature sensor 7 (see separate installation and service instructions).
91	Control mode	Short circuit, temperature sensor 10, connection to solar control module.	Check temperature sensor 10 (see separate installation and service instructions).
92	No solar DHW heating.	Short circuit, collector temperature sensor, connection, temperature sensor 6 at solar control module or sensor at S1 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
93	Control mode	Short circuit, temperature sensor, connection at S3 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).

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Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
94	No solar DHW heating.	Short circuit, DHW tank temperature sensor, connection of temperature sensor [5] at solar control module or sensor at S2 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
98	Control mode.	Lead break, temperature sensor [7], connection to solar control module.	Check temperature sensor [7] (see separate installation and service instructions). Check coding address 20 in "Solar" group.
99	Control mode.	Lead break, temperature sensor [10], connection to solar control module.	Check temperature sensor [10] (see separate installation and service instructions). Check coding address 20 in "Solar" group.
9A	No solar DHW heating.	Lead break, collector temperature sensor, connection, temperature sensor [6] at solar control module or sensor at S1 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9B	Control mode.	Lead break, temperature sensor, connection at S3 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9C	No solar DHW heating.	Lead break, DHW tank temperature sensor, connection of temperature sensor [5] at solar control module or sensor at S2 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9E	Control mode.	No flow rate in solar circuit or flow rate too low, or temperature limiter has responded.	Check solar circuit. Acknowledge fault message (see separate installation and service instructions).
9F	Control mode.	Solar control module or Vitosolic faulty. Displayed if a fault occurs at these devices that has no fault code in the Vitotronic.	Check solar control unit (see separate installation and service instructions).
AB	Control operation, DHW tank may be cold.	Primary store system configuration error: Code "55:3" has been selected, but plug [17][B] is not plugged in and/or Codes "4C:1" and "4E:2" have not been set.	Insert plug [17][B] and check coding.
B1	Control mode.	Communication error, programming unit	Check connections and replace the programming unit if required.
B5	Control mode.	Internal fault	Check correct insertion of PCB (see parts list).

Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
B6	Constant mode.	Invalid hardware recognized	Check coding address “92” in “General” group; “92:166” must be selected. **Note:** Code “8A:176” must be selected for coding address “92” to be displayed.
BA	Mixing valve “Closed”.	Communication error, PCB extension for heating circuits 2 and 3 with mixing valve	Check insertion of PCB and ribbon cable; replace PCB if required.
BC	Control mode without remote control.	Communication error, remote control Vitotrol heating circuit without mixing valve A1 (heating circuit 1)	Check connections for cable (see separate installation and service instructions) and coding address “A0” in the “Heating circuit...” group.
BD	Control mode without remote control.	Communication error, remote control Vitotrol heating circuit with mixing valve M2 (heating circuit 2)	Check connections for cable (see separate installation and service instructions) and coding address “A0” in the “Heating circuit...” group.
BE	Control mode without remote control.	Communication error, remote control Vitotrol heating circuit with mixing valve M3 (heating circuit 3)	Check connections for cable (see separate installation and service instructions) and coding address “A0” in the “Heating circuit...” group.
BF	Control mode. No communication via LON.	Incorrect LON communication module	Replace LON communication module.
C2	Control mode.	Lead break, KM BUS to solar control module or Vitosolic	Check KM BUS cable and device. Without solar control unit: Set code “54:0” in the “General” group.
CF	Control mode. No communication via LON.	LON communication module fault	Check LON communication module and replace if required.
D3	Control mode.	Communication error extension EA1	Check connections (see page 93). Without extension EA1: Set code “5B:0” in the “General” group.
D5	Boiler ramps up to electronic maximum boiler water temperature limit.	The boiler does not “log in” at the cascade control unit.	Check communication via participant check, lines to Vitotronic 200 and codes
D6	Control mode.	Input DE1 at extension EA1 reports a fault	Remove fault at appliance concerned.
D7	Control mode.	Input DE2 at extension EA1 reports a fault	Remove fault at appliance concerned.
D8	Control mode.	Input DE3 at extension EA1 reports a fault	Remove fault at appliance concerned.

Fault Display Vitotronic 300-K *(continued)*

Fault codes

Displayed fault code	System characteristics	Cause	Measures
DA	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit without mixing valve A1 (heating circuit 1)	Check the room temperature sensor (see page 90).
DB	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit with mixing valve M2 (heating circuit 2)	Check the room temperature sensor (see page 90).
DC	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit with mixing valve M3 (heating circuit 3)	Check the room temperature sensor (see page 90).
DD	Control mode without room influence.	Lead break, room temperature sensor, heating circuit without mixing valve A1 (heating circuit 1)	Check room temperature sensor (see page 90) and adjustment of the remote control (see separate installation and service instructions).
DE	Control mode without room influence.	Lead break, room temperature sensor, heating circuit with mixing valve M2 (heating circuit 2)	Check room temperature sensor (see page 90) and adjustment of the remote control (see separate installation and service instructions).
DF	Control mode without room influence.	Lead break, room temperature sensor, heating circuit with mixing valve M3 (heating circuit 3)	Check room temperature sensor (see page 90) and adjustment of the remote control (see separate installation and service instructions).
01 to 97	Control mode	A fault has occurred at a participant, e.g. 12 (Vitotronic 200-H) or no connection to the participant	Download fault code to participant Installation and Service Instructions of the appropriate control unit Check coding Check connecting LON cable Updating the LON participant list Carrying out a participant check
98 and 99	Control mode	Fault message active at Vitocom 200/300 or fault at Vitocom 200/300 or Vitogate 200 or no connection to Vitocom 200/300/Vitogate 200	Check the external connections at Vitocom / Vitogate 200 Installation and Service Instructions Vitocom Check coding Check connecting LON cable Updating the LON participant list Carrying out a participant check

LON participants fault messages

Requirement: The control unit must be programmed as fault manager (code “79:1”).

Boiler Water Temperature Control

Brief description

- The boiler water temperature is regulated by switching the modulating burner.
- The set boiler water temperature is defaulted by the Vitotronic 300-K.

Functions

The boiler water temperature is recorded separately:

- Temperature limiter
- Boiler water temperature sensor

Upper control range limits

Electronic maximum boiler water temperature limit:
Setting range: 68°F (20°C) to boiler coding card default
Changed via coding address “06” in group 2.

Control sequence

The boiler goes cold:

- The burner start signal is selected as the set boiler water temperature –4 K, and the burner starts its own monitoring program.
- You can delay the burner start by several minutes.

Boiler heats up:

- The burner shutdown point is determined by the shutdown differential of 8 K.

Cascade Control

Brief description

- The supply temperature is regulated by starting or stopping the burner or by modulating the individual burners.
- The boilers will be regulated to the set boiler water temperature defaulted by the cascade control unit (stand-alone control).
- Subject to the system design, you may select between one condensing strategy and two conventional boiler strategies.
- The boiler sequence can be determined via code 2 and the boiler sequence selection control.
- Coding addresses that influence the cascade control: "Cascade" group.
  For a description, see codes overview.

Set supply temperature

The set supply temperature is determined from the following parameters:

- the set supply temperatures of the heating circuit without mixing valve A1 and the heating circuits with mixing valve M2 and M3 (if installed),
- the set supply temperatures of additional consumers (e.g. specified by Vitotronic 200-H),
- the set DHW temperature and
- external demands (e.g. the set supply temperature specified by coding address "9B" or via set supply temperature specified by input "0 to 10V" of the extension EA1)

Upper control range limits

- Electronic maximum system supply temperature limit:
  - Setting range: 68 to 261°F (20 to 127°C)
  - Change via coding address "37".
  - This value must be set no higher than the lowest value of coding address "06" of all connected Vitotronic 200.

Lower control range limits

- Electronic minimum system supply temperature limit:
  - Setting range: 32 to 261°F (0 to 127°C)
  - Change via coding address "36".

Control sequence

Stand-alone control: Boilers are connected in parallel

System with or without supply temperature sensor in common flow.
Set code "3B:0" or code "3B:1" in "Cascade" group.

- The cascade control specifies the set boiler water temperature for all currently active boilers. Every Vitotronic 200 regulates the defaulted set temperature individually.
- The control sequence is subject to the start and shutdown criteria selected via the control strategy (coding address "3C"):
  - Condensing strategy
  - Conventional boiler strategy 1
  - Conventional boiler strategy 2.

With supply temperature sensor:

- The control deviation is calculated from the set supply temperature and the actual supply temperature to determine the start and shutdown criteria.

Without supply temperature sensor:

- The control deviation is calculated from the set boiler water temperature and the estimated average actual boiler water temperature of the running boilers to determine the start and shutdown criteria.

Operation with flue gas cascade with positive pressure (code "7E:1"):

- When each additional boiler starts, all currently active burners are briefly ramped up to > 80%.

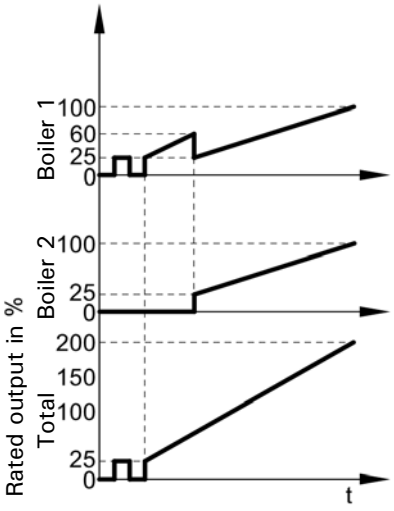
Cascade Control *(continued)*

Examples of the various control strategies

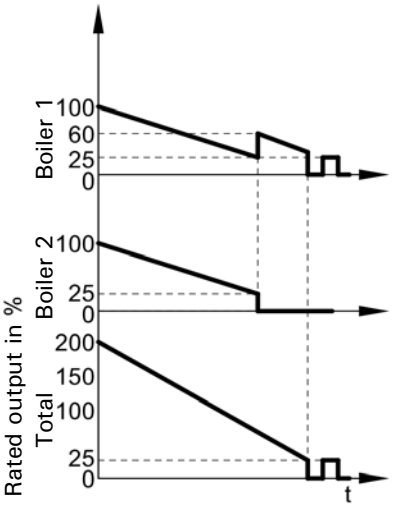
System with 2 Vitodens 200-W.

Condensing strategy (code "3C:0")

Starting



Shutdown



Condensing strategy

- It is the aim of the condensing strategy to operate as many boilers as possible at the lowest output level.

Benefits

- Optimum utilisation of condensing effect.
- Long burner runtimes

Starting criterion

- Boilers are started via an output statement (code "3D:1").
- An additional boiler will start when the currently required output can also be achieved by the currently active boilers plus the next boiler in the boiler sequence (see page 79).

Shutdown criterion

- The boilers are shut down via a shutdown integral. The shutdown criterion is met when the shutdown integral exceeds a limit set via coding address "46" and the boiler started last will be shut down.

5693 976 - 04

Cascade Control *(continued)*

Conventional boiler strategy 1 (code "3C:1")

- With conventional boiler strategy 1, an additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set supply temperature.
- A boiler will be shut down when the remaining boiler(s) can achieve the required output independently.

Benefit:

- As few boilers as possible are active.

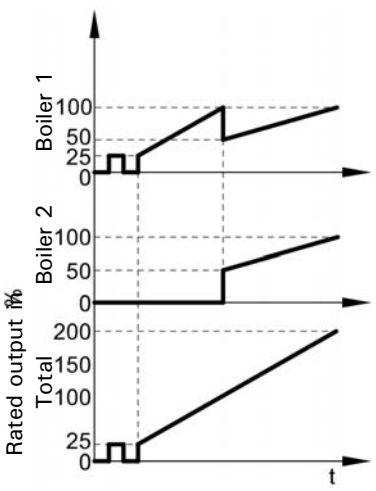
Starting criterion

- The boilers are started via a starting integral.
- The start criterion is met when the start integral exceeds a limit set via coding address "45" and the next boiler in the sequence will start (see page 56).

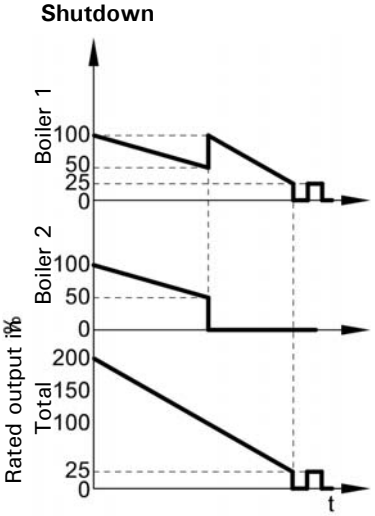
Shutdown criterion:

- Boilers are shut down via an output statement (code "3D:1").
- A boiler is shut down when the currently required output can be achieved without the boiler that was started last.

Starting



Shutdown



Conventional boiler strategy 2 (code "3C:2")

- With conventional boiler strategy 2, an additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set supply temperature.
- A boiler will be shut down if the burners were returned to their minimum output because of a large negative control deviation and the output is still too high.

Benefit:

- Long burner runtimes

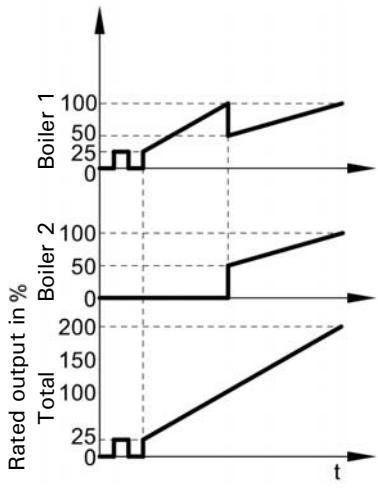
Starting criterion

- The boilers are started via a starting integral.
- The start criterion is met when the start integral exceeds a limit set via coding address "45" and the next boiler in the sequence will start (see page 56).

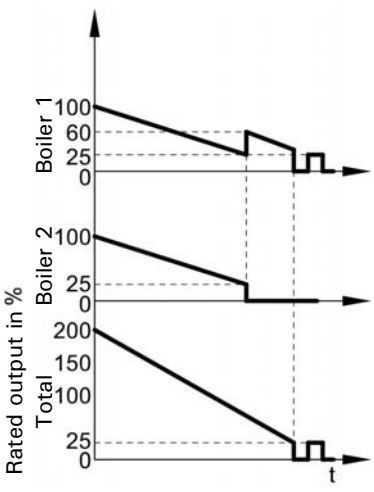
Shutdown criterion:

- The boilers are shut down via a shutdown integral.
- The shutdown criterion is met when the shutdown integral exceeds a limit set via coding address "46" and the boiler started last will be shut down.

Starting



Shutdown



Heating Circuit Control

Brief description

- The control unit comprises control circuits for one heating circuit without mixing valve (subject to order) and two heating circuits with mixing valve.
- The set supply temperature of every heating circuit is determined from the following parameters:
  – Outside temperature
  – Set room temperature
  – Operating mode
  – Heating curve slope and shift
- The supply temperature of the heating circuit without mixing valve corresponds to the common system supply temperature.
- The supply temperature of the mixing valve circuits is regulated by the stepped opening or closing of the mixing valves.
  The mixing valve motor control changes the actuating and pause times subject to the control differential (control deviation).
- Coding addresses that influence the heating circuit control:
  "Heating circuit ..." group.
  For a description, see codes overview.

Functions

The heating circuit without mixing valve is subject to the common supply temperature and its control range limits.
The heating circuit pump is the only actuator.
The supply temperature of the heating circuits with mixing valve is recorded by the supply temperature sensor of the relevant heating circuit.

Time program

In accordance with the times programmed in the "Heating and DHW" heating program, the control unit time switch regulates between the heating programs "Central heating with standard room temperature" and "Central heating with reduced room temperature".
Every operating mode has its own set level.

Outside temperature

A heating curve must be set up for matching the control unit to the building and the heating system.
The heating curve characteristics determine the set boiler water temperature subject to outside temperature.
An average outside temperature is used for control purposes. This comprises the actual and the adjusted outside temperature.

Room temperature

In conjunction with the remote control and room temperature hook-up (observe coding address "B0").
Compared to the outside temperature, the room temperature has a greater influence on the common set supply temperature.
This influence may be adjusted via coding address "B2".

DHW temperature

Priority control

- With priority control: (code "A2:2" in the "Heating circuit..." group):
  The set supply temperature is set to 32°F (0°C) during DHW tank heating.
  The mixing valve closes and the heating circuit pump is switched off.
- Without priority control:
  The heating circuit control unit continues to operate with the same set value.

Heating circuit pump logic (economy mode)

The heating circuit pump is switched off [set supply temperature set to 32°F (0°C)] if the outside temperature exceeds the value selected via coding address "A5" in the "Heating circuit..." group.

Extended economy mode

The heating circuit pump is switched off [set supply temperature set to 32°F (0°C)] if one of the following criteria
is met:

- The adjusted outside temperature exceeds the value selected via coding address "A6" in the "Heating circuit..." group.
- The heating circuit pump can be switched off for a time calculated by the control unit when changing over from heating mode to reduced mode.

  Requirement:
  - There is no risk of frost.
  - Coding address "B0" in the "Heating circuit..." group must be set to 0.

  The idle period can be individually adjusted via coding address "A9" in the "Heating circuit..." group.

  Note: If, during the pump idle period, the system is switched over to heating mode or the set room temperature is increased, the heating circuit pump is switched on, even if the period has not yet expired.

- The actual room temperature exceeds the value selected via coding address "B5" in the "Heating circuit..." group.
- The mixing valve has been closed for 12 min. (mixing valve economy function, coding address "A7" in the "Heating circuit..." group).

Heating Circuit Control *(continued)*

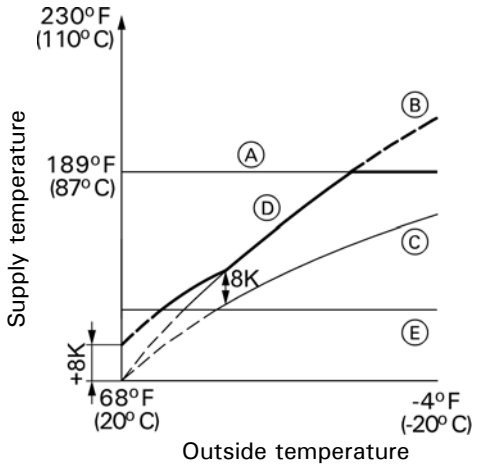
System dynamics mixing valve circuit

You can influence the control characteristics of the mixing valve via coding address "C4".

Central control

Central control for a heating circuit can be programmed via coding address "7A" in the "General" group.
The heating and holiday program then applies to all additional heating circuits of the system.
For these heating circuits, when the heating and holiday program is enabled, "Central control" is displayed.
Any holiday programs that may have been set will be deleted.
Party and economy modes cannot be enabled on all control units.

Supply temperature control



Legend

Ⓐ Max. boiler water temperature
Ⓑ Slope = 1.8 for heating circuit without mixing valve
Ⓒ Slope = 1.2 for heating circuit with mixing valve
Ⓓ Boiler water temperature (with a differential temperature = 8 K)
Ⓔ Lower boiler water temperature, defaulted by the boiler coding card

Frost protection

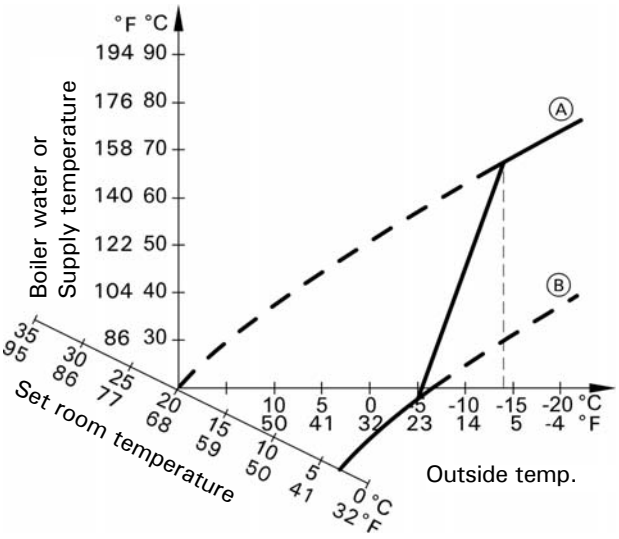
The supply temperature is maintained in accordance with the heating curve for the reduced set room temperature, but at min. 50°F (10°C).
A variable frost limit can be set in accordance with coding address "A3" in the "Heating circuit..." group.

Differential temperature:

The differential temperature is adjustable via coding address "9F" in the "General" group, factory set condition: 8 K.
The differential temperature is the minimum value by which the boiler water temperature should be higher than the highest currently required supply temperature of the heating circuit with mixing valve.

- System with only one heating circuit with mixing valve: The set boiler water temperature will be automatically regulated to 8 K above the set supply temperature.
- System with heating circuit without mixing valve and heating circuit with mixing valve: The set boiler water temperature operates in accordance with a special heating curve. The differential temperature of 8 K towards the set supply temperature is set at the factory.

Example using the settings in the factory set condition



Legend

Ⓐ Heating curve for operation with standard room temperature
Ⓑ Heating curve for operation with reduced room temperature

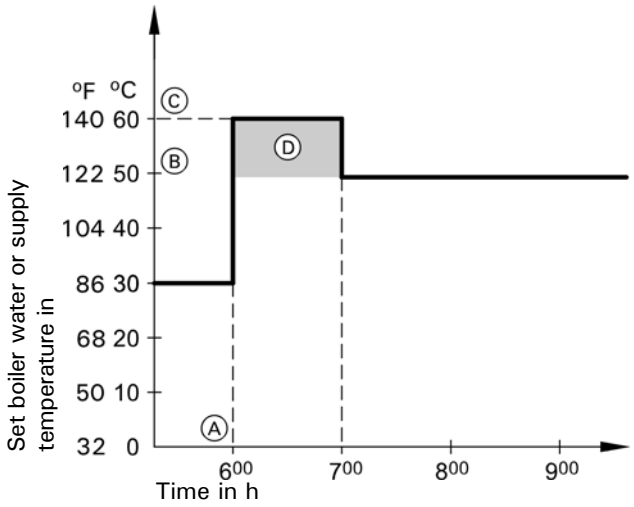
Heating Circuit Control *(continued)*

Raising the reduced room temperature

During operation with reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature.
The temperature is raised in accordance with the selected heating curve, but no higher than the set standard room temperature.

The outside temperature limits for the start and end of the temperature raising can be adjusted via coding addresses “F8” and “F9”.

Example using the settings in the factory set condition



Legend

Ⓐ Start of operation with standard room temperature
Ⓑ Set boiler water or supply temperature in accordance with the selected heating curve
Ⓒ Set boiler water or supply temperature in accordance with the selected coding address “FA”: 122° F + 20% = 146°F (50°C + 20% = 60°C)
Ⓓ Duration of operation with raised set boiler water or supply temperature in accordance with coding address “FB”: 60 min.

Reducing the heat-up time

During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or supply temperature will be raised in accordance with the selected heating curve. The boiler water or supply temperature increase can be automatically raised.

The value and duration of the additional increase of the set boiler water temperature or supply temperature is adjusted in coding addresses “FA” and “FB”.

Upper control range limit

Electronic maximum limit
Setting range: 34 to 261°F (1 to 127°C)
Changes via coding address “C6”.

Note: The maximum limit is no replacement for the underfloor heating system temperature limiter.

Temperature limiter for underfloor heating:

The temperature limiter switches the heating circuit pump OFF if the set value has been exceeded. In such cases, the supply temperature reduces only slowly, i.e. it may be several hours before the system restarts again automatically.

Lower control range limit

Electronic minimum limit
Setting range: 34 to 261°F (1 to 127°C)
Change via coding address “C5”
(operates only in standard mode).

Control sequence

Mixing valve circuit

The mixing valve motor will not be controlled within the “neutral zone” (±1 K).

Supply temperature drops

(Set value −1 K)
The mixing valve motor receives the signal “Mixing valve open”. The signal duration lengthens with an increasing control differential.
The duration of pauses reduces with an increasing control differential.

Supply temperature rises

(Set value +1 K)
The mixing valve motor receives the signal “Mixing valve closed”. The signal duration lengthens with an increasing control differential.
The duration of pauses reduces with an increasing control differential.

DHW Tank Temperature Control

Brief description

- The DHW tank temperature control is a constant temperature control. This is the result of starting and stopping the circulation pump for DHW tank heating. The switching differential is ±2.5 K.
- When the DHW tank is heated, a set supply temperature is specified that is 20 K higher than the set DHW temperature (adjustable via coding address "60" in the "DHW" group).

Functions

Time program

An automatic or an individual time program may be selected for DHW heating and the DHW recirculation pump. Compared with the heating circuit heat up phase, DHW heating starts 30 min earlier in automatic mode. The individual time program enables up to 4 time phases per day to be set for DHW heating and the DHW recirculation pump for every day of the week.
All DHW tank heating sequences will be completed independently of the time program.

In conjunction with coding address "7F" in the "General" group

- Detached house
  Code "7F:1":
  – Automatic mode
    The heating times for heating circuit 1 are applied to systems with two or three heating circuits.
  – Individual time program
    The time phases for DHW heating and the DHW recirculation pump have the same effect on all heating circuits.
- Apartment building
  Code "7F:0":
  – Automatic mode
    For systems with two or three heating circuits, the heating times for the relevant heating circuit will be applied.
  – Individual time program
    The time phases for DHW heating and the DHW recirculation pump can be adjusted individually for each heating circuit.

Priority control

- With priority control: (code "A2:2" in the "Heating circuit..." group):
  The set supply temperature is set to 32°F (0°C) during DHW tank heating.
  The mixing valve closes and the heating circuit pump is switched off.
- Without priority control:
  The heating circuit control unit continues to operate with the same set value.

Frost protection

The DHW tank will be heated to 68°F (20°C) if the DHW temperature sinks below 41°F (5°C).

Auxiliary function for DHW heating

This function is activated by providing a second set DHW temperature via coding address "58" in group "DHW" and activating the fourth DHW phase for DHW heating.

Set DHW temperature

The set DHW temperature can be adjusted between 50 to 140°F (10 and 60°C).
The set range can be extended up to 95°C via coding address "56" in the "DHW" group.
The set default value of the programming unit and/or the Vitotrol 300A remote control units can be allocated via coding address "66" in the "DHW" group.

DHW recirculation pump

This delivers hot water to the draw-off points at adjustable times.
Four time phases can be selected at the control unit for every day.

Auxiliary circuits

DHW heating in conjunction with the heating circuits can be blocked or enabled by changing over the heating program (see code "D5" in the "Heating circuit..." group).

System with primary store system

The above functions also apply in conjunction with primary store systems.
Set the following codes:
"55:3" in the "DHW" group, "4C:1", "4E: 2" in the "General" group.

System with solar control unit

A third set DHW temperature can be specified via coding address "67" in the "DHW" group.
The DHW tank is only reheated by the boiler if the temperature falls below this value.

DHW Tank Temperature Control *(continued)*

Control sequence

Set code "55:0" in the "DHW" group, DHW tank heating

The DHW tank goes cold (set value −2.5 K; change via coding address "59"):

- The common set supply temperature is set 20 K higher than the set DHW temperature (change via coding address "60").

The DHW tank is hot, (set value + 2.5 K):

- The common set supply temperature is returned to the set weather-compensated value.
- Pump run-on:
  The circulation pump runs on after DHW tank heating until one of the following criteria are met:
  - The weather-compensated set supply temperature has been reached.
  - The set DHW temperature is exceeded by 5 K.
  - The set max. run-on time is reached (coding address "62").
- Without pump run-on (code "62:0")

Code "55:1" in the "DHW" group, adaptive DHW tank heating

With adaptive DHW tank heating, the speed of the temperature rise during DHW heating is taken into account.

The DHW tank goes cold (set value −2.5 K; change via coding address "59"):

- The common set supply temperature is set 20 K higher than the set DHW temperature (change via coding address "60").

The DHW tank is hot:

- The control unit checks whether the boiler will be required to supply heating energy after the DHW tank has been heated up or whether residual boiler heat should be transferred to the DHW tank. Accordingly, the control unit determines the burner and circulation pump stop times to prevent the set DHW temperature being substantially exceeded after the DHW tank has been heated up.

Code "55:2" in the "DHW" group, DHW tank temperature control with 2 DHW tank temperature sensors

DHW tank temperature sensor 1 enables the circulation pump for DHW tank heating and is evaluated for stop conditions during the pump run-on time.
DHW tank temperature sensor 2:
The DHW tank heating will be switched on early if a lot of hot water is drawn off. The DHW tank heating will be switched off early if no hot water is drawn off.

DHW tank goes cold:

- Set value −2.5 K, adjustable via coding address "59"
  or
- Actual DHW temperature at sensor 2 < set DHW temperature x factor for start time (adjustment via coding address "69")

The DHW tank is hot:

- Set value +2.5 K
  and
- Actual DHW temperature at sensor 2 > set DHW temperature x factor for stop time (adjustment via coding address "68")

Code "55:3" in the "DHW" group, DHW tank temperature control, primary store system

The DHW tank goes cold (set value −2.5 K; change via coding address "59"):

- The common set supply temperature is set 20 K higher than the set DHW temperature (change via coding address "60").
- The primary pump in the primary store system starts.
- The 3-way mixing valve opens and then regulates to the defaulted set value.
- The circulation pump for DHW tank heating cycles (short term ON and OFF) until the set supply temperature has been reached (set DHW temperature + 5 K). Then it runs constantly.
  If, during heating, the actual value falls below the required set temperature, the circulation pump for DHW tank heating will temporarily cycle again.

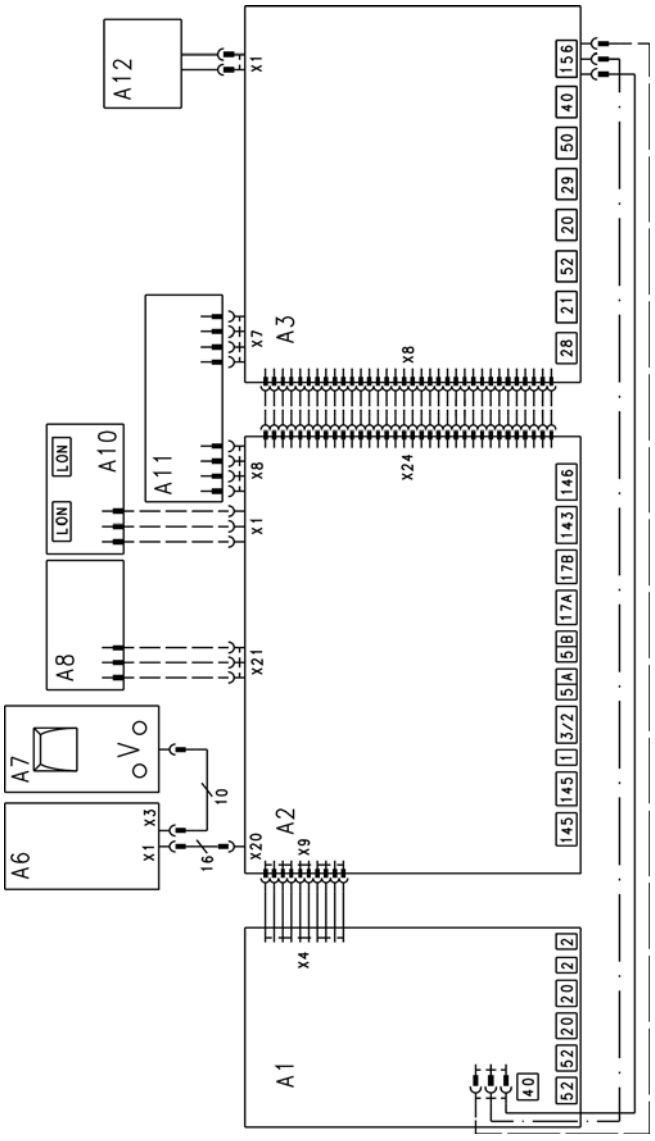
The DHW tank is hot:

- (DHW tank temperature sensor 1:
  actual value ≥ set value
  and
  DHW tank temperature sensor 2:
  actual value > set value −1.5 K):
- The common set supply temperature is returned to the set weather-compensated value.
- The circulation pump for DHW tank heating stops immediately when the 3-way mixing valve is fully opened.
  or
- The circulation pump for DHW tank heating stops after expiry of the run-on time that is selected via code "62"

Connection and Wiring Diagrams

Overview

For the Vitotronic 200, refer to the boiler Service Instructions

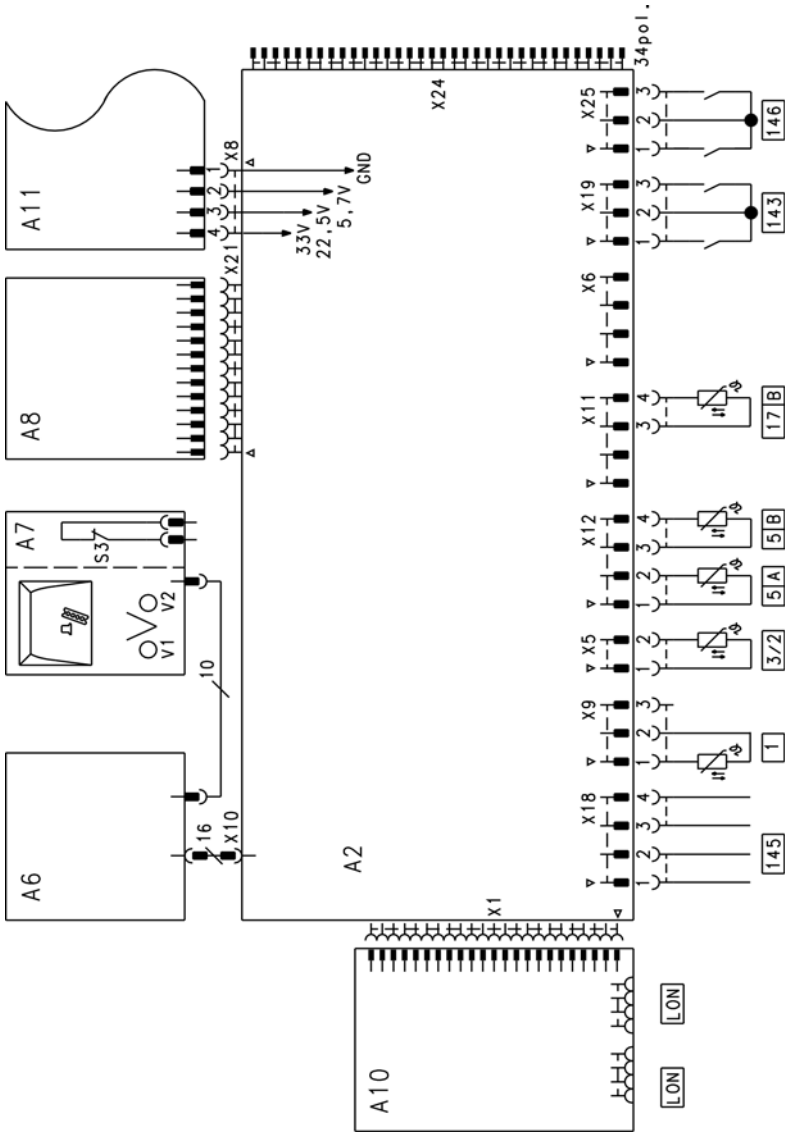


Legend

A1	Extension PCB heating circuits 2 and 3 (accessory)	A8	PCB
A2	Main PCB low voltage	A10	LON communication module (accessory)
A3	Main PCB 120V ~	A11	Power supply unit PCB
A6	Programming unit	A12	Boiler control unit
A7	Optolink PCB/emissions test switch	X...	Electrical interfaces

Connection and Wiring Diagrams *(continued)*

Main PCB LV

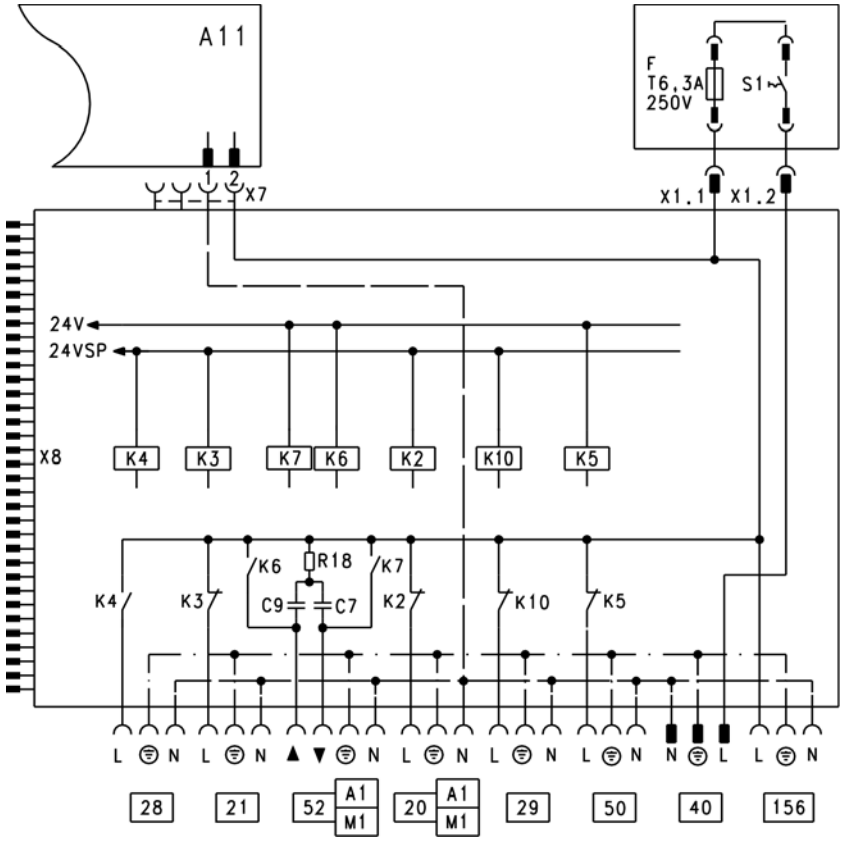


Legend

1	Outside temperature sensor
3/2	Common supply temperature sensor
5 A	DHW tank temperature sensor
5 B	DHW tank temperature sensor 2 (accessory)
17 B	Temperature sensor primary store system
143	External hook-up
145	KM BUS participant (accessory)
146	External hook-up
LON	Cable for data exchange between control units (accessories)
S3	Emissions test switch ""
V1	Fault indicator (red)
V2	ON indicator (green)
X...	Electrical interfaces

Connection and Wiring Diagrams *(continued)*

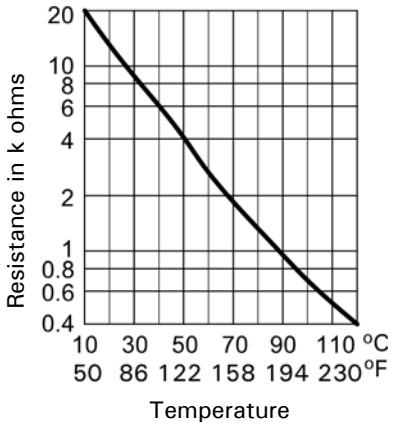
Main PCB 120V~



Legend

20	Heating circuit pump or Primary store system
21	DHW pump (accessory)
28	DHW recirculation pump (accessory)
29	Distribution pump
40	Power supply 120V/60 Hz
50	Central fault message (on site)
52	3-way mixing valve, primary store system
156	Power supply connection of accessories
F	Fuse
K2-K10	Relay
S1	ON/OFF switch "⏻"
X...	Electrical interfaces

Sensors



Viessmann NTC 10 kΩ

DHW tank, supply and room temperature sensor

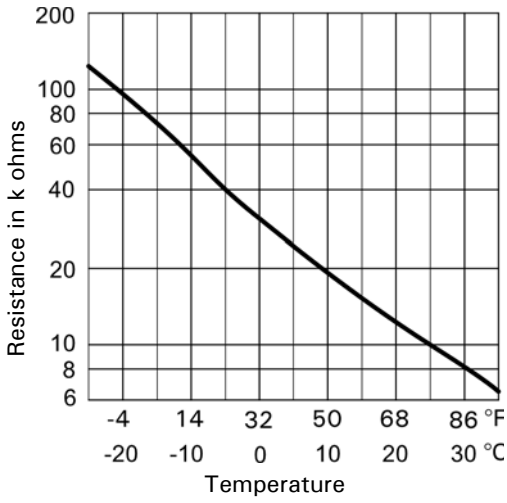
Note:

- The supply temperature sensor can be used as a contact or immersion temperature sensor.
- The room temperature sensor is connected at terminals 3 and 4 in the Vitotrol 300A.

Installation and Service Instructions for Vitotrol 300A

Viessmann NTC 10 kΩ (blue identification)

1. Pull corresponding plug.
2. Check the sensor resistance and compare it with the curve.
3. In the case of severe deviation, check the installation and replace the sensor if required.



Outside temperature sensor

Viessmann NTC 10 kΩ (blue identification)

1. Pull plug [1].
2. Check the sensor resistance across plug terminals “1” and “2” and compare with the curve.
3. If the results are very different from the curve, disconnect the wires from the sensor and repeat the test on the sensor.
4. Depending on the result, replace the lead or the outside temperature sensor.

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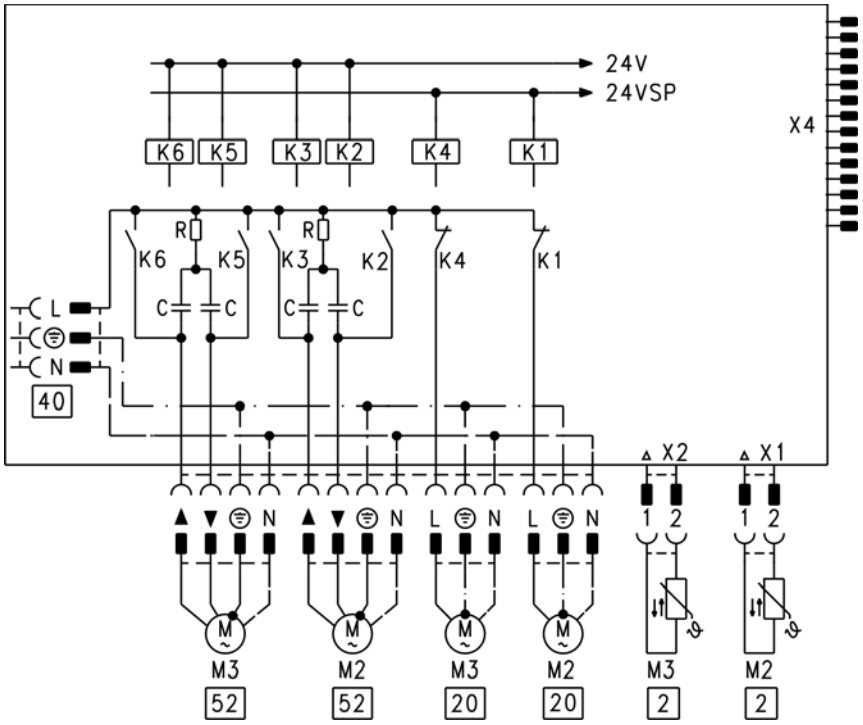
Extension for Heating Circuits 2 and 3 (accessory)

For connecting two extension kits for heating circuit with mixing valve.

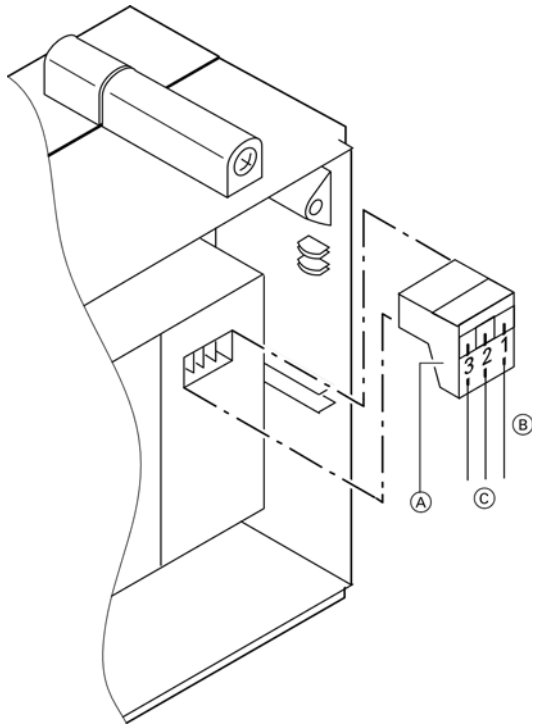


Legend

2 Supply temperature sensors
20 Heating circuit pumps
52 Mixing valve motors

K1-K6 Relay
X... Electrical interfaces

Mixing Valve Motor Kit



▲ Mixing valve “Open”
▼ Mixing valve “Closed”

Legend
Ⓐ Mixing valve plug
Ⓑ Field wiring
Ⓒ Connection to mixing valve adaptor

Components:
- Mixing valve motor (not for flanged mixing valve)
- Connecting plug for the heating circuit pump
- Supply temperature sensor as contact temperature sensor for measuring the supply temperature, with connecting cable 19 ft. (5.8 m) long.

Changing the rotational direction (if required)

1. Insert 3-pin plug Ⓐ in the mixing valve motor rotated through 180°.
2. Check the rotational direction.

Manual mixing valve adjustment

Lift the motor lever, unhook the mixing valve handle and pull plug Ⓐ.

Specification mixing valve motor

Rated voltage	120V~
Rated frequency	60 Hz
Power consumption	4 W

Permissible ambient temperature

■ during operation	32 to 104°F (0 to +40°C)
■ during storage and transport	-4 to 149°F (-20 to +65°C)

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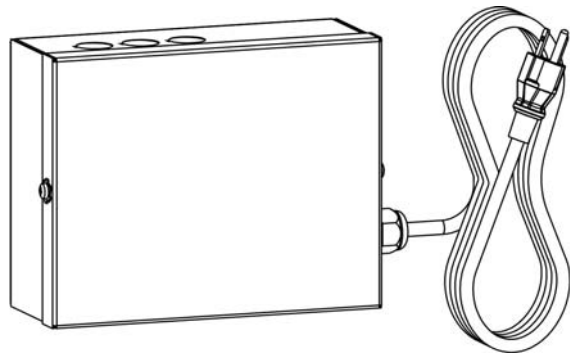
Extension EA1 Accessory (optional)



Digital data inputs DE1 to DE3

Functions:

- External heating program changeover, separate for heating circuits 1 to 3
- External blocking
- External blocking with fault message input
- External demand with minimum boiler water temperature
- Fault message input
- Brief operation of the DHW recirculation pump

When connecting external contacts, observe the requirements of safety category II, i.e. 8.0 mm air-gap and creep path or maintain a 2.0 mm insulation thickness against 'live' parts.

Input function assignment

Select the input functions by means of the following codes in the "General" group at the boiler control unit:

- DE1: Coding address "5D"
- DE2: Coding address "5E"
- DE3: Coding address "5F"

Assigning the heating program changeover function to the heating circuits

The allocation of the heating program changeover to the relevant heating circuit is selected via coding address "D8" in the "Heating circuit..." group:

- Code "D8:1": Changeover via input DE1
- Code "D8:2": Changeover via input DE2
- Code "D8:3": Changeover via input DE3

The effect of the heating program changeover is selected via coding address "D5" in the "Heating circuit..." group.

Duration of the heating program changeover

- Contact constantly closed:
  The changeover is active as long as the contact is closed.
- Contact only closed briefly via pushbutton:
  The changeover is enabled for the time selected in coding address "F2" in the "Heating circuit..." group.

DHW recirculation pump runtime for brief operation

The DHW recirculation pump can be started outside the times when it is enabled according to the time program.

The DHW recirculation pump is started by closing the contact at DE1, DE2 or DE3 by means of a pushbutton. The runtime is adjusted via coding address "3D" in the "General" group.

Analogue input 0–10V

The 0–10V hook-up provides an additional set boiler water temperature:

0–1V Is taken as "no default for set boiler water temperature".

Note: Ensure DC separation between the LV output and the earth conductor of the on-site voltage source.

Coding address "1E" in the "General" group:

- "1E:0" ≙ temperature demand adjustable in the range from 32 to 212°F (0 to 100°C) 1V ≙ 50°F (10°C) set value change 10V ≙ 212°F (100°C) set value change
- "1E:1" ≙ temperature demand adjustable in the range from 86 to 248°F (30 to 120°C) 1V ≙ 86°F (30°C) set value change 10V ≙ 248°F (120°C) set value change

Output 157

Connection of a central fault messaging facility or signalling reduced mode (reduction of the heating circuit pump speed).

Select the function of output 157 via coding address "5C" in the "General" group.

Refer to the EA1 module Installation Instructions

Parts List

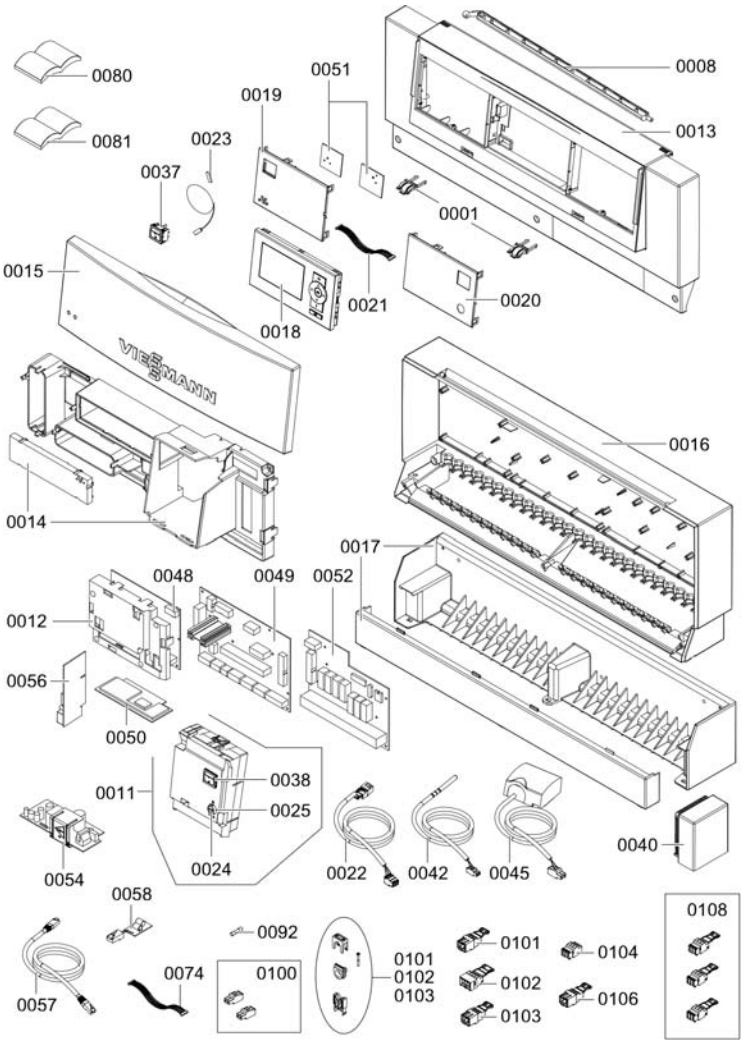
When ordering spare parts:

Quote the part and serial no. (see type plate Ⓐ) and the item no. of the required part (as per this parts list).
Obtain standard parts from your local supplier.

For the Vitotronic 200, see boiler service instructions

Parts

0001 Hinges
0008 Supporting stay
0011 Programming unit ON/OFF switch
0012 Cover, extension PCB heating circuits 2 and 3
0013 Casing front
0014 PCB cover
0015 Front flap
0016 Casing back
0017 Wall mounting panel
0018 Programming unit
0019 l.h. fascia
0020 r.h. fascia
0021 Ribbon cable, 10 PIN
0022 Connecting cable, mixing valve extension PCB
0023 Connecting cable, emissions test switch
0024 Fuse holder cap for control fuse
0025 Fuse holder for control fuse
0037 Emissions test switch, single-pole
0038 Two-pole switch (ON/OFF switch)
0040 Outside temperature sensor [1]
0042 Immersion temperature sensor (boiler water temperature sensor, DHW tank temperature sensor, supply temperature sensor low loss header)
0045 Contact temperature sensor (supply temperature sensor)
0048 PCB, extension heating circuits 2 and 3
0049 Main PCB low voltage
0050 PCB
0051 Optolink PCB/emissions test switch
0052 Main PCB 120V~
0054 Power supply unit PCB
0056 LON communication module
0057 LON connecting cable
0057 LON Terminator
0074 Connecting cable, 16 PIN
0080 Installation and service instructions
0081 Operating instructions
0092 Fuse T 6.3A/250V~
0100 Plugs for sensors (7 pieces)
0101 Plugs for pumps (3 pieces)
0102 Plug [52] (3 pieces)
0103 Mains outlet plug [156] (3 pieces)
0104 Power supply plugs [40] (3 pieces)
0106 Plug [50] (3 pieces)
0108 Plug [143], [145], [146]
Ⓐ Type plate



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Specification

For the Vitotronic 200,
see boiler Service Instructions

Rated voltage	120V~
Rated frequency	60 Hz
Rated current	6A~
Power consumption	10 W
Protection class	I

Permissible ambient temperature

■ during operation	32 to 104°F (0 to +40°C) Installation in living spaces or boiler rooms (standard ambient conditions)
■ during storage and transport	-4 to 149°F (−20 to +65°C)

Rated relay output breaking capacity at 120V~

20	Heating circuit pump or Primary pump, primary store system	4 (2) A~ *3
21	DHW pump	2A~ *3
28	DHW recirculation pump	2A~ *3
29	Distribution pump	2A~ *3
50	Central fault message	2A~ *3
52	Mixing valve motor or Motor, 3-way mixing valve, primary store system	0.1A~ *3

*3 Total max. 6A~

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Technical information subject to change without notice.

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